

Appendix A1 Trip Generation Report

Report

Northwest Arkansas Regional Airport Intermodal Accesss Road Trip Generation

Prepared for
Northwest Arkansas Regional Airport Authority

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CH2MHILL

Tulsa, Oklahoma

Acronyms

| | |
|--------|---|
| ADPM | average day of the peak month |
| ADT | average-daily traffic |
| LOS | Level of Service |
| NWARA | Northwest Arkansas Regional Airport |
| NWARAA | Northwest Arkansas Regional Airport Authority |
| O/D | Origin Destination |

Contents

| | |
|--|-----|
| Contents..... | ii |
| Acronyms | iii |
| Trip Generation | 1 |
| Background | 1 |
| Trip Generation Rates | 3 |
| Airport Vehicle Traffic Forecasts..... | 5 |
| Trip Distribution..... | 6 |
| Mode Split..... | 8 |
| Traffic Assignment | 8 |
| Level of Service | 9 |
| Conclusion..... | 9 |

| | |
|------------|-------------------------------------|
| Appendix 1 | Original Destination Survey |
| | Vehicle Traffic Pattern Survey |
| | Origin – Destination Survey Results |

| | |
|------------|---|
| Appendix 2 | Preliminary Traffic and Revenue Study-Wilbur Smith Associates |
|------------|---|

| | |
|------------|------------------|
| Appendix 3 | Level of Service |
|------------|------------------|

Tables

| | | |
|---|---|---|
| 1 | Development Timetable | 2 |
| 2 | Trip Generation Rates | 4 |
| 3 | Peak Hour Vehicle Traffic Estimates (Airport-Related Trips Only) | 5 |
| 4 | Average Daily Vehicle Traffic Estimates (Airport-Related Trips Only)..... | 5 |
| 5 | Mode Split for Airport-Related Traffic..... | 8 |
| 6 | Background Vehicle Traffic Projections (Non-Airport) | 9 |

Figures

| | |
|---|--------------------------------------|
| 1 | Airport Development Plan |
| 2 | Origin and Destination Survey |
| 3 | 2000 Average Daily Traffic/Peak Hour |
| 4 | 2005 Average Daily Traffic/Peak Hour |
| 5 | 2010 Average Daily Traffic/Peak Hour |
| 6 | 2015 Average Daily Traffic/Peak Hour |
| 7 | 2020 Average Daily Traffic/Peak Hour |

Trip Generation

This Trip Generation Report estimates average daily traffic (ADT) and peak-hour volumes to be generated by the Northwest Arkansas Regional Airport (NWARA) and other facilities located on airport property, through the next twenty years (2005-2025). This report also addresses future on-airport traffic conditions and identifies potential airport roadway deficiencies, in terms of level-of-service (LOS), that may result from increased traffic to and from the airport during the 20-year planning horizon. This is an update to the Trip Generation Report prepared by CH2M HILL last revised July 2001.

Background

Review of current airport activity and recent trip generation studies provided the basis for determining trip generation rates used to estimate peak hour and daily vehicle trips. The following trip generators were identified to categorize existing and future trips to and from the airport:

- Airport Terminal and Support Facilities
- Hotel
- Golf Course
- Cargo Facilities
- Office Park
- Industrial Park - West
- General Aviation - West
- General and Corporate Office
- Maintenance and Modifications

Based on long-range planning efforts conducted by the Airport Authority and their planning consultant, Barnard Dunkelberg and Company, the above trip generators represent a reasonable expectation of continued and future airport development. Table 1 summarizes the development timetable for each facility with respect to the 20-year planning horizon. The approximate location for the construction and/or expansion for each facility is shown on Figure 1, included at the end of this report.

Note that daily origin-destination passengers were calculated to represent an average day of the peak month (ADPM), and are based on annual enplanement forecasts provided by Barnard Dunkelberg. The ADPM is a standard time period used in the analysis of airport facility requirements.

TABLE 1
Airport Development Timetable

| Year | Trip Generator | Independent Variable |
|-----------------|-----------------------------|----------------------------|
| 2005 (Existing) | Terminal | 3,535 Daily O/D Passengers |
| | General & Corporate | 200 Employees |
| 2010 | Terminal | 5,240 Daily O/D Passengers |
| | Hotel | 100 Rooms |
| | Golf | 200 Acres |
| | Cargo Facility | 5 Acres |
| | General & Corporate | 250 Employees |
| | Maintenance & Modifications | 500 Employees |
| 2015 | Terminal | 6,435 Daily O/D Passengers |
| | Hotel | 100 Rooms |
| | Golf | 200 Acres |
| | Cargo Facility | 10 Acres |
| | Office Park | 15 Acres |
| | General Aviation-West | 150 Employees |
| | General & Corporate | 350 Employees |
| | Maintenance & Modifications | 650 Employees |
| 2020 | Terminal | 7,460 Daily O/D Passengers |
| | Hotel | 100 Rooms |
| | Golf | 200 Acres |
| | Cargo Facility | 10 Acres |
| | Office Park | 15 Acres |
| | Industrial Park-West | 30 Acres |
| | General Aviation-West | 150 Employees |
| | General & Corporate | 500 Employees |
| | Maintenance & Modifications | 1,000 Employees |
| 2025 | Terminal | 8,648 Daily O/D Passengers |
| | Hotel | 100 Rooms |
| | Golf | 200 Acres |
| | Cargo Facility | 10 Acres |
| | Office Park | 15 Acres |
| | Industrial Park-West | 60 Acres |
| | General Aviation-West | 150 Employees |
| | General & Corporate | 500 Employees |
| | Maintenance & Modifications | 1,000 Employees |

Trip Generation Rates

Research on airport trip generation has shown a statistically significant relationship between the number of daily origin-destination passengers and vehicle trip ends (in terms of the average daily traffic [ADT] entering and exiting the airport). Since most of what is known about airport trip generation is usually related to the airport's origin-destination air passenger volumes, the resulting vehicle traffic volumes primarily reflect the air passenger terminal(s) trip generation potential, as opposed to the other airport land uses. As a result, the average daily traffic for the air-passenger terminal and associated support facilities was estimated using the air passenger traffic forecasts for the airport. However, other trip generation rates were applied for the remaining traffic generators on the airport. For example, to estimate the vehicular traffic generated by the hotel, the number of rooms were used; for the major employers, the number of employees; and for some of the other land uses, the number of acres devoted to that land use. The trip generation rates for these non-terminal building-related traffic generators were taken from the ITE Trip Generation Manual (7th Edition) and TRB NCHRP Report 187.

As a starting point, the trip generation rate for the current air-passenger terminal was determined. Since this type of information is not routinely collected and tracked by the NWARAA, vehicle traffic and enplanement information was collected during February 2000 and March 2004. The collected data were used to develop current peak-hour and daily trip generation rates for the air-passenger terminal related traffic. While not a peak period of activity, the February and March dates did provide a strong correlation between the number of air passengers handled and the associated vehicle traffic at the terminal building. Thus, the number of vehicle trips could be predicted during higher passenger loads. As a crosscheck, the airport's employment, rental car contracts, and parking records were used to check the reasonableness and consistency of the trips generated by the air passengers.

As the NWARAA develops its property, the airport's commercial and industrial land uses will generate an increasingly larger share of the airport's vehicle traffic, compared to the air passenger terminal. All of the trip generation rates used are summarized in Table 2.

TABLE 2
Trip Generation Rates

| Trip Generator | Trip Rate Based On | PM Peak Hour Vehicle Trip Rate | | | ADT Trip Rate | Source |
|-------------------------------|--------------------|--------------------------------|-------|--------|---------------|----------|
| | | In | Out | Total | | |
| Terminal and Support Facility | O/D Passengers | .085 | .100 | .185 | 2.06 | Actual* |
| Hotel | Rooms | .31 | .28 | .59 | 8.17 | ITE #310 |
| Golf | Acres | .10 | .20 | .30 | 5.04 | ITE #430 |
| Cargo Facility | Acres | | | | | Actual** |
| Office Park | Acres | 4.24 | 24.04 | 28.28 | 195.11 | ITE #22 |
| Industrial Park-West | Acres | 1.86 | 6.98 | 8.84 | 63.11 | ITE #130 |
| General Aviation-West | Employees | .31 | .37 | .04668 | 6.50 | TRB |
| General & Corporate | Employees | 0.08 | 0.38 | | 3.32 | ITE #710 |
| Maintenance & Modifications | Employees | 0.19 | 0.21 | 0.40 | 2.13 | ITE #140 |

* Measured from on-site traffic counts taken between February 14, 2000 and March 11, 2000

** Measured from actual count data from the Little Rock National Airport air cargo terminal (April 2004). Future year ADT counts were calculated by the Arkansas Department of Transportation.

Based on traffic counts conducted at Drake Field in 1995, the trip generation rate computed for average daily terminal-related traffic (other support traffic was not included in the 1995 data) was 1.72 vehicles per O/D passenger as compared to the 2.06 daily trip rate reflected in Table 2, above. The 2.06 daily trip rate includes terminal trips as well as all trips generated by airport support facilities. These support facilities include the FAA traffic control tower, air-cargo distribution center, maintenance hangars, ARFF, and fuel farm. Likewise, a recent model published in ITE (Airport Trip Generation, ITE Journal, May, 1998) indicates that the airport-related trip rates, presented above, are within the expected trip rates for similar airport facilities (between 1.72 and 3.73 daily trips per O/D passenger).

While a significant amount of traffic is projected to come from various ancillary development areas at the airport, traffic from general aviation activity is not projected to be significant. According to the NWARA Master Plan, relatively few general aviation operations will use NWARA because there are several, competitive general aviation facilities located nearby (i.e. Drake Field/Fayetteville Municipal Airport, Rogers Municipal Airport, Springdale Municipal Airport, Bentonville Municipal Airport, and Siloam Springs Municipal Airport).

Airport Vehicle Traffic Forecasts

Existing Year 2005, and the 2010, 2015, 2020 and 2025 air passenger traffic forecasts were chosen to represent incremental points at which infrastructure needs should be evaluated. Tables 3 and 4 summarize the existing and future peak-hour and average-daily vehicle trips generated by the airport. Vehicle trips were calculated by applying the trip generation rates in Table 2 to the development variables outlined in Table 1. For example, one hotel room is estimated to generate 8.17 vehicle trips per day. As a result, 100 hotel rooms (to be constructed by 2005) will generate about 817 ADT, in and out of the facility.

TABLE 3
Peak Hour Vehicle Traffic Estimates (Airport-Related Trips Only)

| Generator | 2005 Peak Hr | 2010 Peak Hr | 2015 Peak Hr | 2020 Peak Hr | 2025 Peak Hr |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Terminal and Support Facil. | 654 | 969 | 1,190 | 1,380 | 1,600 |
| Hotel | 0 | 59 | 59 | 59 | 59 |
| Golf | 0 | 60 | 60 | 60 | 60 |
| Cargo Facility | 0 | 120 | 255 | 300 | 330 |
| Office Park | 0 | 0 | 424 | 424 | 424 |
| Industrial Park-West | 0 | 0 | 0 | 265 | 530 |
| General Aviation-West | 0 | 0 | 102 | 102 | 102 |
| General & Corporate | 92 | 115 | 161 | 230 | 230 |
| Maintenance & Modifications | 0 | 200 | 260 | 400 | 400 |
| TOTAL PEAK HOUR | 746 | 1,523 | 2,512 | 3,221 | 3,735 |

TABLE 4
Average Daily Vehicle Traffic Estimates (Airport-Related Trips Only)

| Generator | 2005 ADT | 2010 ADT | 2015 ADT | 2020 ADT | 2025 ADT |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| Terminal and Support Facil. | 7,282 | 10,794 | 13,256 | 15,368 | 17,815 |
| Hotel | 0 | 817 | 817 | 817 | 817 |
| Golf | 0 | 1,008 | 1,008 | 1,008 | 1,008 |
| Cargo Facility | 0 | 800 | 1700 | 2000 | 2200 |
| Office Park | 0 | 0 | 2,927 | 2,927 | 2,927 |
| Industrial Park-West | 0 | 0 | 0 | 1,893 | 3,787 |
| General Aviation-West | 0 | 0 | 975 | 975 | 975 |

TABLE 4
Average Daily Vehicle Traffic Estimates (Airport-Related Trips Only)

| Generator | 2005 ADT | 2010 ADT | 2015 ADT | 2020 ADT | 2025 ADT |
|-----------------------------|--------------|---------------|---------------|---------------|---------------|
| General & Corporate | 664 | 830 | 1,162 | 1,660 | 1,660 |
| Maintenance & Modifications | 0 | 1,065 | 1,385 | 2,130 | 2,130 |
| TOTAL AVERAGE DAY | 7,946 | 15,314 | 23,229 | 28,778 | 33,318 |

Trip Distribution

The distribution of NWARA's ground traffic can be separated into two categories: external airport trips and internal airport trips. External vehicle trip distribution refers to the trips that start and end at off-airport locations. These trips will use the region's road system and the airport's north and south entrances. The second category, internal trips, refers to the vehicle trips generated between points on the airport's property. Vehicles making internal trips will use the airport's internal road system.

Since detailed, current O/D information did not exist for NWARA, CH2M HILL conducted a series of traffic counts and an O/D travel survey to obtain a better understanding of the external trip patterns to and from the Airport. Traffic count data were collected in February 2000 at the following locations:

- SH 264, east and west of the Airport Entrance Road
- SH 12, east and west of Regional Avenue
- Airport Entrance Road south of Regional Avenue
- Terminal Entrance Road north of Regional Avenue
- Regional Avenue south of SH 12
- Regional Avenue north of Airport Entrance Road

Traffic count data were collected again in March 2004 at the following locations:

- Airport Entrance Road north of SH 264
- Regional Avenue south of SH 12
- Terminal Entrance Road north of Regional Avenue

O/D survey data were collected at four locations, both on- and off-airport property, from 0900 to 2000 hours on April 9, 2001 to April 12, 2001. Figure 2 illustrates the four locations listed below:

- Vehicle Checkpoint 1 - SH 12 west of Regional Avenue
- Vehicle Checkpoint 2 - Regional Avenue south of SH 12
- Vehicle Checkpoint 3 - Airport Entrance Road north of SH 264
- Vehicle Checkpoint 4 - SH 264 west of Airport Entrance Road

The survey form used to collect the O/D data has been reproduced in Appendix 1. Using this schedule, the surveyors collected information on trip ends, trip purpose, vehicle occupancy, trip frequency, vehicle type, and willingness to pay a toll for improved access to NWARA. The raw data were carefully edited to identify any errors, omissions, and logical inconsistencies, before any analyses were conducted. The final data set used for analysis consisted of 2,988 useable responses. Analyses were conducted on the entire sample of 2,988 observations and also on a smaller subset of 1,418 observations, which provide information on the airport-related trips. The non-airport related responses are from drivers who were captured while simply travelling along SH 12 or SH 264, but not specifically going to or from the airport. Survey summary statistics and maps are included in Appendix 1. Four desire?? line maps were created to show relational trip patterns of the trips surveyed. The maps depict the frequency of trips to and from a particular O/D pair, but vary based on trip purpose (all trip purposes, business trips only, and to/from work trips only) and survey sample size (all trips or airport-related trips only).

The traffic count data from February 2000 were deemed the most reliable source for establishing existing traffic patterns. The count data were comprehensive and showed consistencies between movements over time. The O/D survey data are considered valuable, however the small sample size and short survey duration may tend to skew actual travel characteristics slightly.

For example, analysis of the useable O/D survey responses revealed that approximately 58 percent of the traffic destined to the airport during the O/D survey schedule used SH 12 located at the northern boundary of the airport. The balance, 42 percent, accessed NWARA using SH 264 and the south entrance to the airport during the O/D survey. Whereas, based on the February 2000 traffic count data, 54 percent of traffic to and from the airport arrives from the south. Despite this 12 percent difference, the actual volume differential is only about 400 vehicles.

In addition, the March 2004 traffic count data provides a very similar directional split with 55 percent of the traffic accessing the airport from the south and 45 percent accessing from the north with a difference of about 600 vehicles due to the increasing volume.

Focusing on the airport-related trips, both the O/D survey and traffic count data indicate that approximately 80 percent of the vehicles accessing NWARA from the south and using the south airport entrance and SH 264, start or end their trips at points east of the airport. Similarly, the survey data show that as much as 95 percent of the traffic using the north airport entrance and SH 12, come from or go to points east of the airport. This is not unexpected since many of the larger communities and higher population densities are found along the north-south, I-540 corridor on the east side of the airport. Most of the area to the northwest and southwest of the NWARA is less densely populated and primarily in agricultural land uses.

It is assumed that future trip distribution patterns will vary slightly from the observed traffic count patterns as this area of the state continues to grow. The large well-established employers (Wal-Mart located north of the airport) will continue to account for many of the vehicles accessing the airport through the north entrance and using SH 12 while other large well-established employers (J.B. Hunt and Tyson Foods, located east and south of the airport) will continue to account for many vehicles accessing the airport through the south

entrance using SH 264. Also, Fayetteville, Farmington, Springdale, and Lowell, and the areas around these communities, including the University of Arkansas, will continue to grow and be a source of the vehicles entering the airport from the south, using SH 264. However, according to population forecasts, the communities north of the airport will grow faster than the communities to the south. Therefore the current distribution of trips, estimated to be 55 percent from the south versus 45 percent from the north, is expected to shift slightly to the north and result in an approximate even 50/50 split by year 2020.

Mode Split

In this area of the state, given the population densities and nature of urban development, the private automobile is the mode of choice for most personal transportation. This is supported by the O/D survey findings shown in Table 5.

Public transportation modes, such as public bus service, is not well developed and not used for airport access. There are ongoing discussions with Ozark Regional Transit to provide bus service to the airport, however there is no funding available or specific dates when bus service may be provided. Therefore with reference to the airport, there are no announced plans to make major improvements to public transportation modes, services, or infrastructure until demand is warranted and funding is available. Even though shuttle buses, limousines, and taxicabs currently provide airport access, the private automobile will likely remain the primary access mode to the airport for the next 20 years. Therefore, the existing, observed mode split for NWARA shown in Table 5, was used for the entire planning horizon.

In addition, truck traffic using the terminal access road is 2 to 3 percent and truck traffic constitutes approximately 5 percent of the total traffic on Regional Avenue, based on visual surveys conducted in February of 2000.

TABLE 5
Mode Split for Airport-Related Traffic

| Mode | Percent of Use |
|------------------------------------|----------------|
| Private Auto (Including Employees) | 80% |
| Rental Cars | 15% |
| Limousines/Shuttle Vans/Taxicabs | 1% |
| Commercial Delivery/Other | 4% |
| TOTAL | 100% |

Traffic Assignment

Vehicle trips were assigned to the airport terminal network based on the previous trip generation, trip distribution and mode split results. Trips were assigned to the main terminal area for existing 2005 conditions as well as for 2010, 2015, 2020, and 2025 forecasted

conditions. Trips were assigned to the primary access and egress roadways and to the supplemental service roadways for the above planning years based on the anticipated airport development timetable given in Table 2.

Airport-generated trips were added to the projected background (non-airport) traffic on SH 264 and SH 12. Background traffic forecasts were prepared using a 3 percent per year (compounded) growth rate applied to both state highways. This 3-percent estimate is commensurate with other state highway projections in the surrounding area. Non-airport-related trips currently traveling on SH 264 and SH 12 past the airport equal approximately 1,400 and 1,600 ADT, respectively. Future peak-hour and average-daily non-airport traffic is shown in Table 6.

TABLE 6
Background Vehicle Traffic Projections (Non-Airport)

| Year | SH 264 | | SH 12 | |
|------|-----------|-------|-----------|-------|
| | Peak Hour | ADT | Peak Hour | ADT |
| 2005 | 145 | 1,600 | 170 | 1,900 |
| 2010 | 170 | 1,900 | 205 | 2,200 |
| 2015 | 200 | 2,200 | 245 | 2,600 |
| 2020 | 225 | 2,600 | 280 | 3,000 |
| 2025 | 260 | 2,900 | 310 | 3,400 |

Specific traffic assignments for each planning year is provided on Figures 3 through 7 at the end of this report.

Level of Service

Level of service (LOS) analysis is provided as Appendix 3 to this report.

Conclusion

The results of this Trip Generation Report were used to determine the LOS and traffic analysis included as Appendix 3. This report presents the existing and expected average-daily and peak-hour traffic to and from the airport. According to the trip generation analysis, 33,318 vehicles will be generated by the airport and other on-airport businesses by the year 2025. This is approximately four times greater than current vehicle traffic levels at the airport. Throughout the 20-year buildout, the distribution of traffic traveling to and from the airport is expected to grow and to shift slightly to the north, resulting in an estimated 50/50 distribution split, caused by increasing population and employment areas north of NWARA. However, the majority of vehicle trips will continue to come from the east, approximately 90 percent.

A companion memorandum, "NWARA Ground Access: LOS Analysis, Existing and Forecasted Conditions," analyzes the traffic impacts of the additional traffic on the roadway network around the airport. The conclusions from the LOS analysis are that the performance of the roadways will degrade significantly in the next ten to twenty years. SH 264 will operate at LOS E (delaying most vehicles), and most of the stop-controlled intersections around the airport will operate at LOS F. The effects of the high-traffic volumes are that improvements are needed so that effective ground access can be provided to the public.

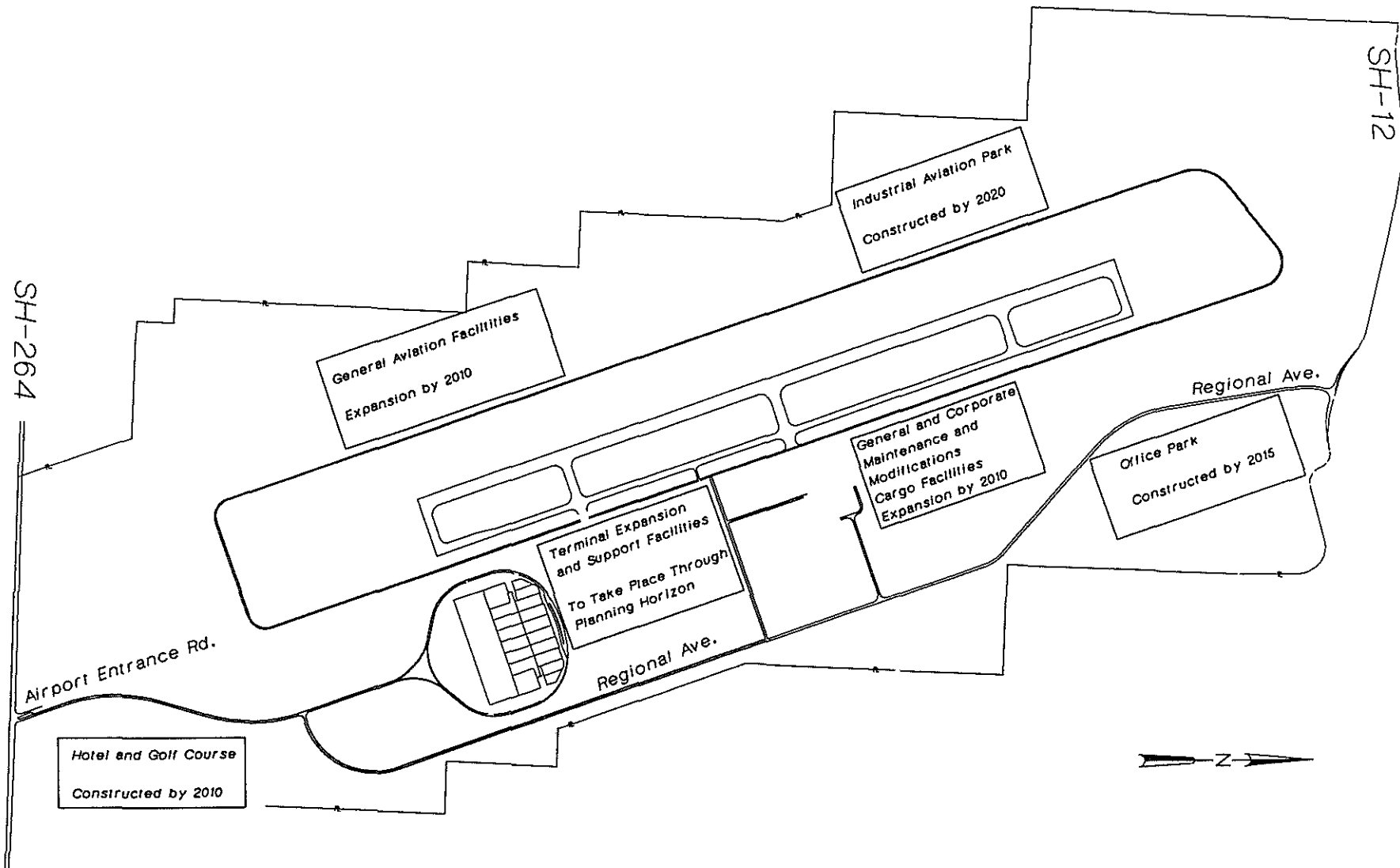


Figure 1.
Northwest Arkansas
Regional Airport
Development Plan

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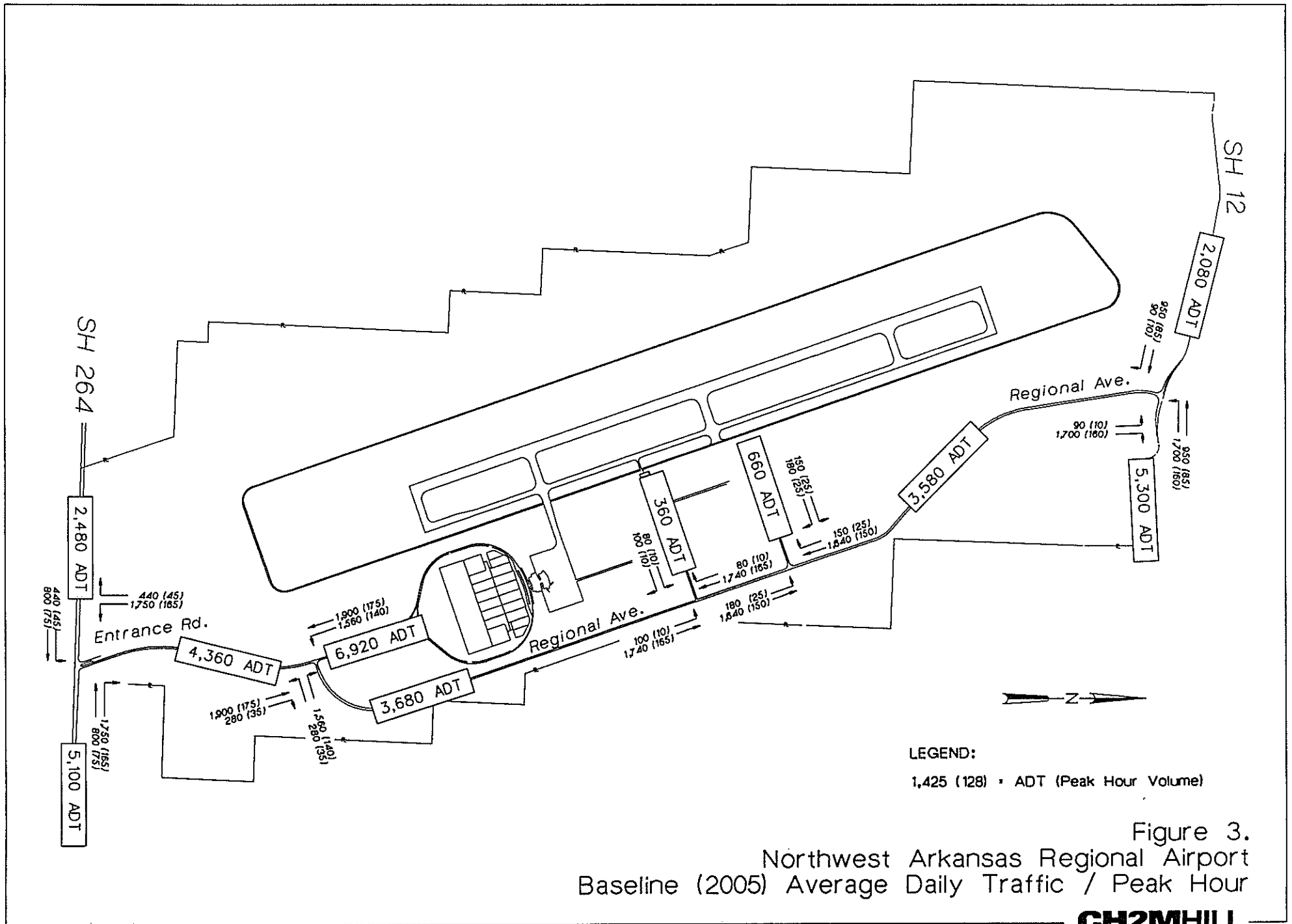


Figure 3.
 Northwest Arkansas Regional Airport
 Baseline (2005) Average Daily Traffic / Peak Hour

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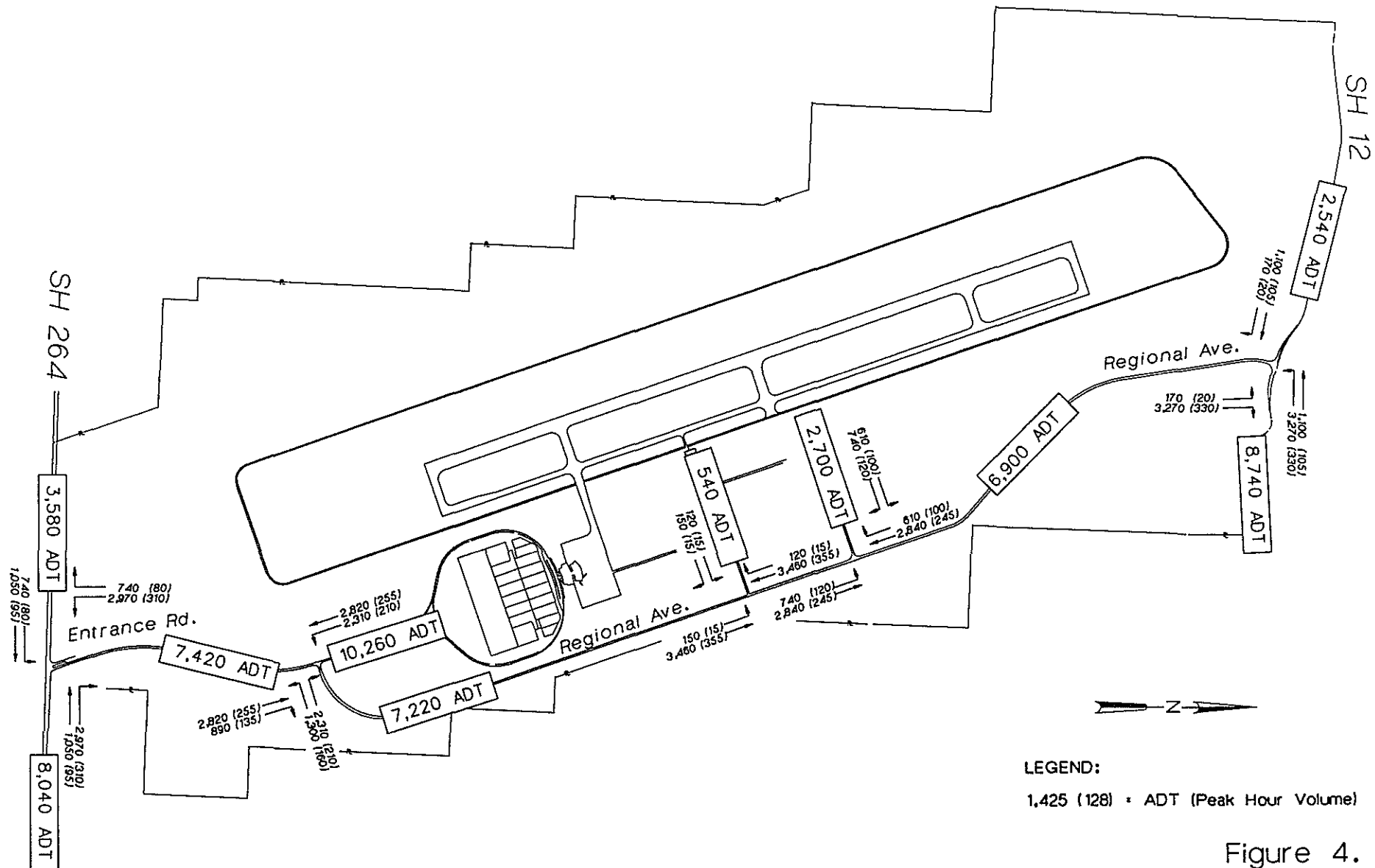
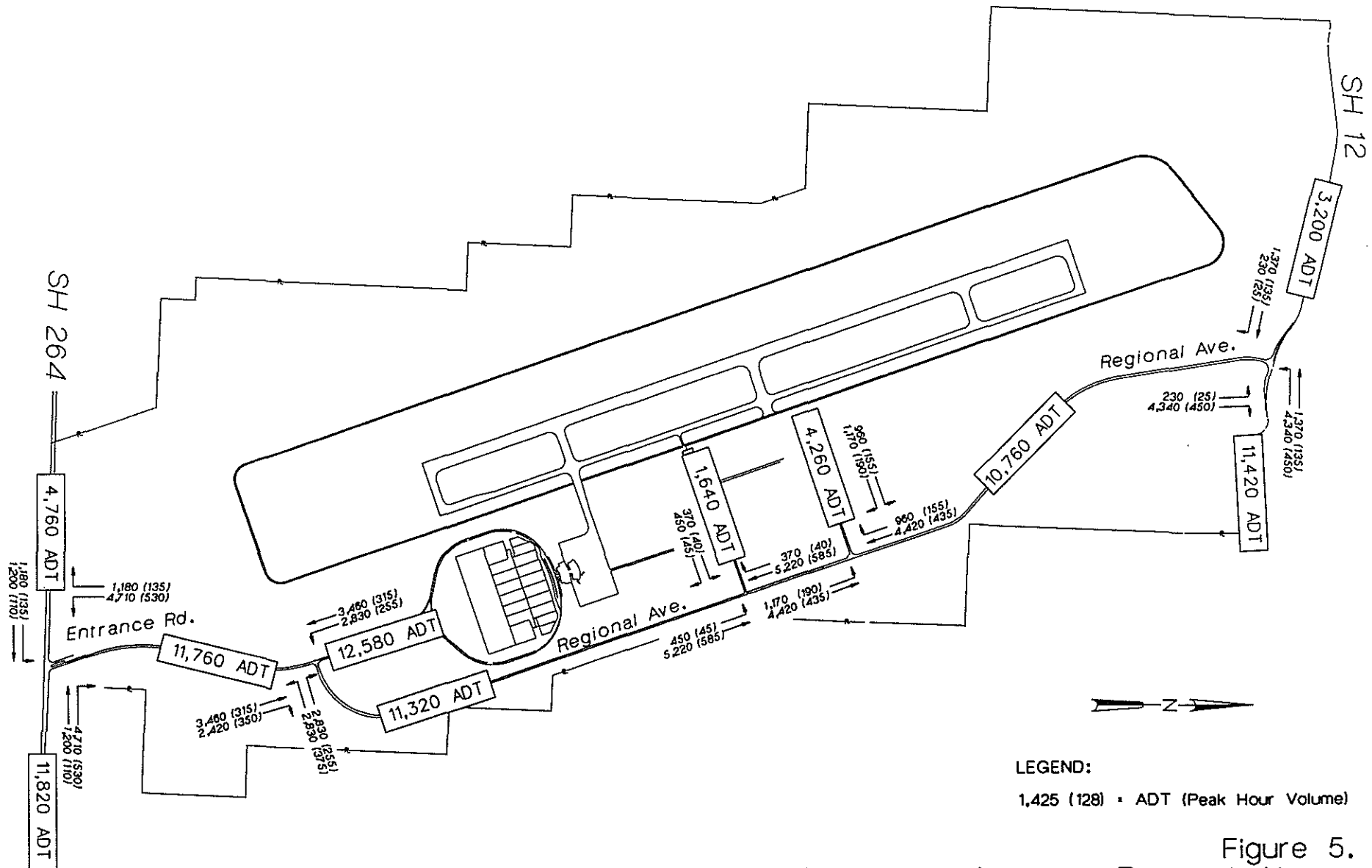


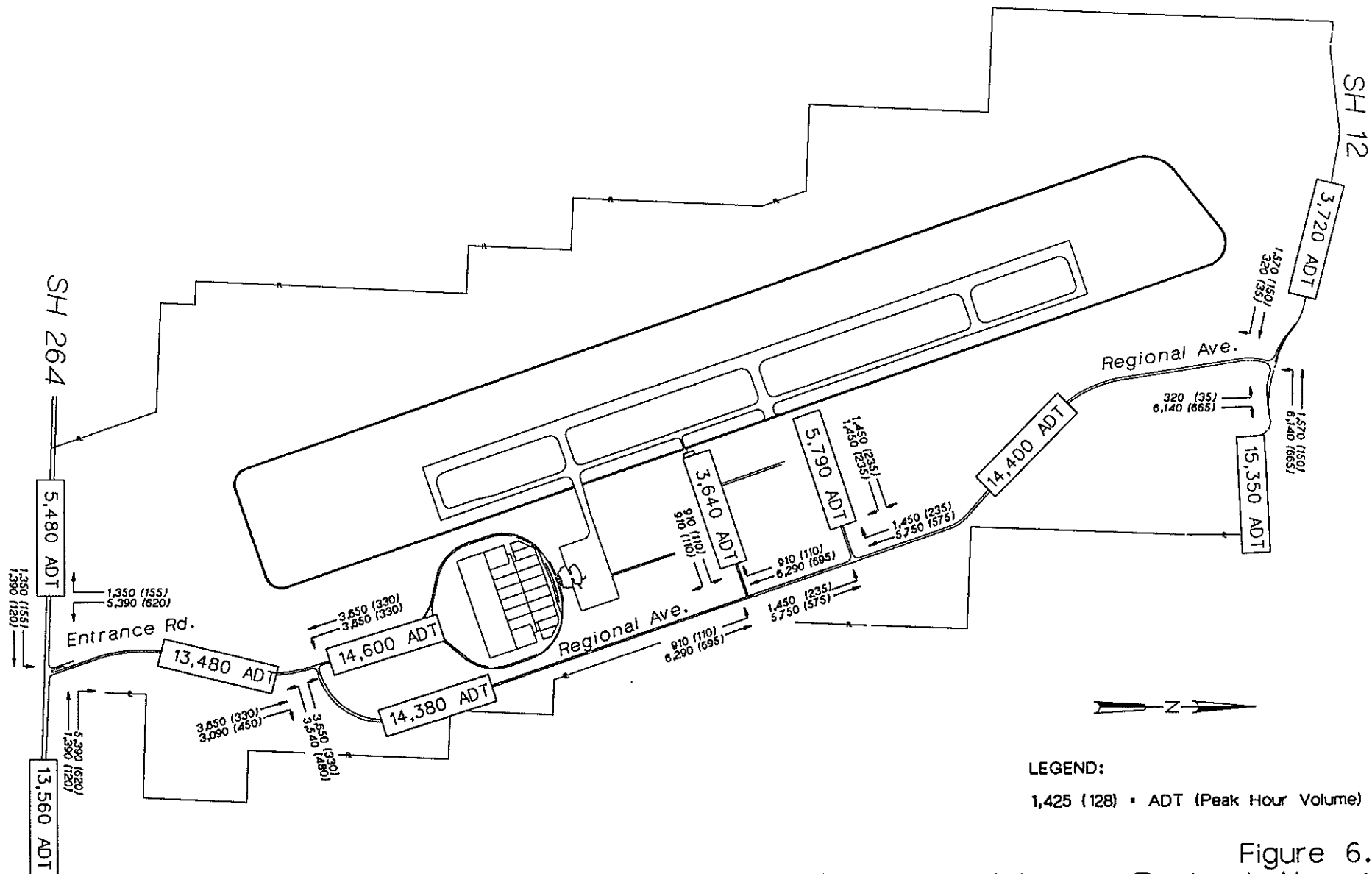
Figure 4.
Northwest Arkansas Regional Airport
2010 Average Daily Traffic / Peak Hour



LEGEND:

1,425 (128) • ADT (Peak Hour Volume)

Figure 5.
Northwest Arkansas Regional Airport
2015 Average Daily Traffic / Peak Hour



LEGEND:

1,425 (128) • ADT (Peak Hour Volume)

Figure 6.
Northwest Arkansas Regional Airport
2020 Average Daily Traffic / Peak Hour

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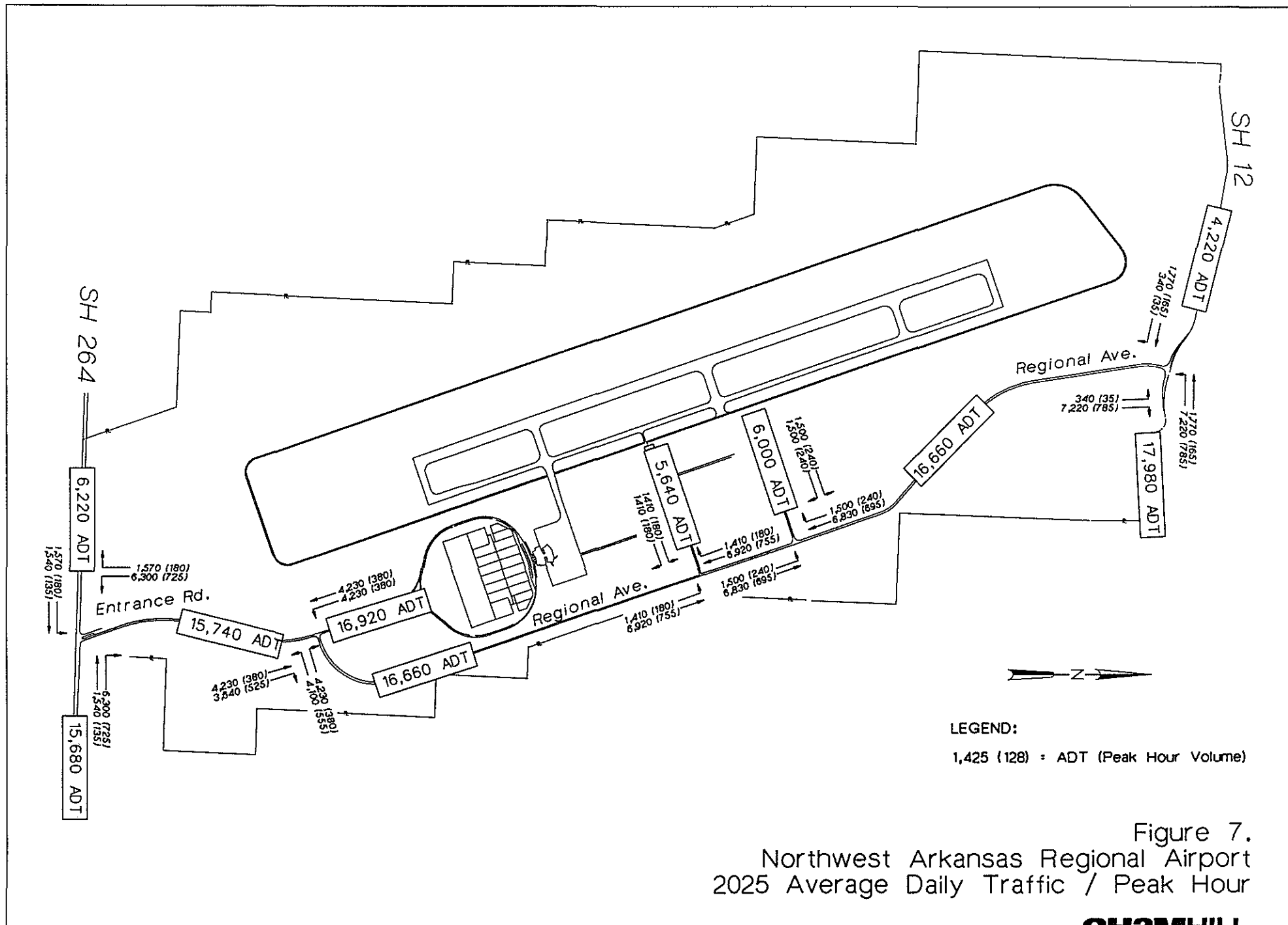


Figure 7.
Northwest Arkansas Regional Airport
2025 Average Daily Traffic / Peak Hour

Appendix 1
Original Destination Survey

Vehicle Travel Pattern Survey

Northwest Arkansas Regional Airport

| | | | | |
|------------------|---|---|---|---|
| Survey Station | 1 | 2 | 3 | 4 |
| Date: | | | | |
| Time: | | | | |
| Travel Direction | N | S | E | W |

Dear Airport User/Motorist:

This survey is undertaken to obtain important information concerning travel to and from the Northwest Arkansas Regional Airport needed to plan for improved highway access to the airport. You are asked to complete and mail this postage-paid questionnaire at your earliest convenience. Your cooperation will help make this survey successful and facilitate highway improvements that meet the needs of the end users--YOU.

- A. Where did you begin this particular trip (in this direction) today? Include city, nearest intersection, street address, or other location description, such as Walmart Headquarters. Please be as specific as possible.

City, major intersection, address, other

City/Town County State Zip Code

- B. Where will this particular trip (in this direction) end? Include nearest intersection, address, or other explanation, e.g., Airport, OAS, Wal-Mart Headquarters, Tyson Headquarters, etc. (should not be same answer as Question A)

City, major intersection, address, other

City/Town County State Zip Code

- C. What was the purpose of this trip when given this survey? (circle one) 1. To/from work 2. Business 3. Personal
4. Recreational 5. School 6. Shopping 7. Social 8. Other: _____

- D. Will you make a return trip along this same route today? (circle one) Yes or No
If no, will you make the return trip on a later day? (circle one) Yes or No

- E. On the average, how many times per week do you make this same trip? (circle one)
Less than 1 1 2 3 4 5 More than 5

- F. If your answer to Question E, was less than 1, how many times per month do you make this same trip? (circle one)
Less than 1 1 2 3 More than 3

- G. How many people, including yourself were in your vehicle? (circle one)
1 2 3 4 5 More than 5

- H. Please identify type of vehicle you were driving. (circle one)
1. Auto/van/motorcycle/light truck, with 2 axles and 4 or less tires. 5. 5 axle truck
2. Single-unit truck or tractor or buses with 2 axles and 6 tires 6. 6, or more, axle truck
3. 3 axle truck or bus 7. Miscellaneous, or special vehicle
4. 4 axle truck not classified above

- I. In general, is this trip typically made (circle one)
1. Throughout the year 2. During season only (specify winter/spring/summer/fall) _____
3. During weekdays only 4. Other (please specify) _____

- J. In making this trip, would you be willing to utilize a new airport access road that connected with I-540 north of Springdale, AR and south of Rogers, AR that allowed speeds of 60 mph, or greater? (circle one) Yes or No

- K. In using a new airport access road would you be willing to pay a reasonable fee? (circle one) Yes or No
If you answered yes, how much are you willing to pay one way? \$_____

- L. Other comments? _____

ORIGIN - DESTINATION SURVEY RESULTS

Trip Purpose

| Total | | SE Quadrant | | SW Quadrant | | NE Quadrant | | NW Quadrant | | Airport | |
|-------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|---------|--------|
| Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % |
| 1282 | 42.9% | 475 | 39.9% | 582 | 39.9% | 761 | 45.9% | 65 | 31.1% | 672 | 47.4% |
| 685 | 22.9% | 306 | 25.7% | 353 | 24.2% | 341 | 20.6% | 65 | 31.1% | 283 | 20.6% |
| 1021 | 34.7% | 488 | 34.3% | 525 | 36.0% | 657 | 31.6% | 79 | 37.8% | 453 | 32.7% |
| 2988 | 100.0% | 1189 | 100.0% | 1463 | 100.0% | 1659 | 100.0% | 209 | 100.0% | 1418 | 100.0% |

Business
To / From Work
Non-Business
Total

Trip Frequency

| >5 trips per week | 5 trips per week | 4 trips per week | 3 trips per week | 2 trips per week | 1 trip per week | <1 trip per week | 3 trips per month | 2 trips per month | 1 trip per month | <1 trip per month | unlabeled | TOTAL |
|-------------------|------------------|------------------|------------------|------------------|-----------------|------------------|-------------------|-------------------|------------------|-------------------|-----------|-------|
| Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. |
| 388 | 24.0% | 142 | 11.0% | 56 | 4.4% | 76 | 5.9% | 114 | 8.9% | 128 | 9.7% | 1282 |
| 163 | 23.8% | 68 | 5.7% | 21 | 1.7% | 29 | 2.2% | 42 | 3.2% | 59 | 4.6% | 683 |
| 195 | 19.8% | 93 | 9.4% | 37 | 3.7% | 60 | 6.0% | 74 | 7.4% | 96 | 9.6% | 1021 |
| | | | | | | | | | | | | 2988 |

Business
To / From Work
Non-Business
Undetermined

Vehicle Occupancy

| Obs. | Veh | People | Rate |
|------|------|--------|------|
| 1418 | 1418 | 2012 | 1.42 |
| 1570 | 1570 | 2243 | 1.43 |
| 2988 | 2988 | 4255 | 1.43 |

Airport
Non-Airport
Total

Secondarily / Feeding

| Total | | SE Quadrant | | SW Quadrant | | NE Quadrant | | NW Quadrant | | Airport | |
|-------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|---------|--------|
| Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % |
| 10 | 0.3% | 5 | 0.4% | 7 | 0.5% | 7 | 0.4% | 0 | 0.0% | 1 | 0.1% |
| 3 | 0.1% | 0 | 0.0% | 2 | 0.1% | 3 | 0.2% | 0 | 0.0% | 1 | 0.1% |
| 9 | 0.3% | 1 | 0.1% | 4 | 0.3% | 8 | 0.5% | 0 | 0.0% | 5 | 0.4% |
| 11 | 0.4% | 4 | 0.3% | 6 | 0.4% | 7 | 0.4% | 0 | 0.0% | 5 | 0.4% |
| 491 | 16.4% | 230 | 19.3% | 241 | 14.0% | 241 | 14.5% | 36 | 17.2% | 262 | 18.5% |
| 1958 | 65.5% | 727 | 61.3% | 926 | 68.2% | 1143 | 68.9% | 141 | 67.5% | 884 | 62.3% |
| 192 | 6.4% | 84 | 7.1% | 100 | 6.8% | 93 | 5.6% | 11 | 5.3% | 2 | 0.2% |
| 314 | 10.5% | 138 | 11.6% | 141 | 9.7% | 157 | 9.5% | 21 | 10.0% | 168 | 11.8% |
| 2988 | 100.0% | 1189 | 100.0% | 1450 | 100.0% | 1659 | 100.0% | 209 | 100.0% | 1418 | 100.0% |

During Fall
During Winter
During Summer
During Spring
During Weekdays Only
Throughout the Year
Other
No Response
Total

Willingness to Pay

| \$0.00 - \$0.24 | | \$0.25 - \$0.49 | | \$0.50 - \$0.99 | | \$1.00 - \$1.49 | | \$1.50 - \$1.99 | | \$2.00 - \$2.99 | | \$3.00 + | | Total | |
|-----------------|-------|-----------------|------|-----------------|-------|-----------------|-------|-----------------|------|-----------------|------|----------|------|-------|--------|
| Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % | Obs. | % |
| 846 | 65.8% | 18 | 1.4% | 104 | 8.1% | 283 | 22.0% | 12 | 0.9% | 21 | 1.6% | 2 | 0.2% | 1286 | 100.0% |
| 437 | 63.7% | 9 | 1.3% | 87 | 12.7% | 142 | 20.7% | 1 | 0.1% | 10 | 1.5% | 0 | 0.0% | 686 | 100.0% |
| 645 | 65.1% | 16 | 1.6% | 97 | 9.7% | 223 | 22.5% | 4 | 0.4% | 14 | 1.4% | 2 | 0.2% | 971 | 100.0% |
| 15 | 60.0% | 0 | 0.0% | 3 | 12.0% | 7 | 28.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 25 | 100.0% |
| 1943 | 65.0% | 43 | 1.4% | 281 | 9.4% | 655 | 21.9% | 17 | 0.6% | 45 | 1.5% | 4 | 0.1% | 2988 | 100.0% |

Business
To / From Work
Non-Business
Misc
Total

Appendix 2
Preliminary Traffic and Revenue Study

April 21, 2000

Mr. Jerry Farrar, P.E.
Vice President
CH2M Hill
502 South Main Street
Suite 400
Tulsa, Oklahoma 74103

Re: Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Preliminary Traffic and Revenue Study

Dear Mr. Farrar:

Wilbur Smith Associates (WSA) is pleased to submit to CH2M Hill this preliminary traffic and toll revenue feasibility assessment of the proposed Northwest Arkansas Regional Airport Intermodal Access Road (hereafter referred to as the "Access Road"). The proposed Access Road would connect the recently-opened Northwest Arkansas Regional Airport (XNA) with the existing federal highway network in Benton and Washington Counties.

STUDY OBJECTIVE AND SCOPE

Northwest Arkansas is one of the fastest-growing economic areas within the state of Arkansas. The economic engines that drive it's economy include manufacturing, retail sales, trucking and distribution, food processing, banking, electronics, and the aerospace industry. To accommodate regional business growth, XNA was opened to passenger traffic in November 1998; cargo movement through the airport is also an important and growing facet of activity at XNA.

The objectives of this study were to provide preliminary forecasts of traffic and toll revenue, as well as determine the initial financial feasibility and bonding capacity of the Access Road, which would provide a limited-access, high-speed connection from the airport to the regional highway system. The study made maximum use of readily-available data for both traffic and socioeconomic parameters within the project corridor. Capital cost estimates to construct the Access Road were provided by CH2M Hill and factored into the feasibility calculation.

The overall work program included a review of existing corridor travel and traffic characteristics (including traffic count information), an evaluation of economic growth considerations, and a toll sensitivity analysis. Due to the preliminary nature of the study, this analysis was not conducted at a sufficient level of detail to be suitable for use in project financing. It is intended to provide information to determine preliminary project feasibility, and whether or not further studies suitable for project financing are warranted.

PROJECT DESCRIPTION

The Access Road would connect XNA to the regional federal highway system. As evident in the location map in Figure 1, six potential corridors are being considered for implementation. In five of the corridors, the Access Road would provide direct access to U.S. 62/71 to the east. In the sixth corridor, the Access Road would provide direct access to XNA from U.S. 412 to the south. In every case, a fully-directional interchange would be provided at the terminus of the Access Road that connects to the existing highway network. All patrons of the Access Road would pass through a single toll collection point, immediately south of the airport terminal access. Also provided would be an interchange at S.H. 264 to allow local movements around the airport; traffic using this interchange would also be tolled to prevent any toll-free movements on the Access Road. Under the configuration scenarios in which the Access Road would connect to U.S. 62/71, a fully-directional interchange with S.H. 112 is envisioned for ultimate implementation. However, under the initial phase implementation of the Access Road, the interchange at S.H. 112 is not planned, and therefore was not incorporated into this traffic and revenue feasibility analysis.

EXISTING HIGHWAY SYSTEM

The primary routes of travel within Northwest Arkansas are U.S. 62/71 and Business U.S. 71 (both of which provide the major north-south movement), and U.S. 412 (which provides the major east-west movement). A series of arterial and state highways provide supplemental and local access within the study area.

U.S. 62/71 and Business U.S. 71 connect many of the population, industrial, commercial, and academic sectors of Northwest Arkansas, including Wal-Mart Stores, Inc. in Bentonville, J.B. Hunt Transport Services, Inc. in Lowell, Tyson Foods, Inc. in Springdale, and the University of Arkansas in Fayetteville. The proposed Access Road would provide a direct connection to these economic activity centers. U.S. 412 provides access to the commercial centers in Tulsa, Oklahoma, via the Cherokee Turnpike in northeast Oklahoma.

ACCESS ROAD CORRIDOR ALIGNMENTS

There are six potential corridor alignments being considered for implementation of the Access Road. Each corridor has a terminus that joins the XNA terminal roadway system. In Corridor 1 through Corridor 5, the project alignment would provide direct access to U.S. 62/71 to the east. The Corridor 6 alignment would provide direct access to XNA from U.S. 412 to the south. A brief description of the configuration for each corridor is presented below.

Corridor 1 – Corridor 1 is the northern-most alignment. It is considered an upgrade of the present S.H. 264 alignment, and has an existing diamond interchange at U.S. 71. The Corridor 1 alignment is also the longest of those being considered, at 8.11 miles. The alignment passes just south of Cave Springs and just north of Healing Springs.

Corridor 2 – The eastern terminus of Corridor 2 is at U.S. 71 in the vicinity of Apple Blossom Avenue. The alignment follows a relatively straight path from its eastern terminus toward

Healing Springs. The alignment passes through the southern portion of Healing Springs, and has a distance of 7.57 miles.

Corridor 3 – The eastern terminus of Corridor 3 is generally the same location as that for Corridor 2, at U.S. 71 in the vicinity of Apple Blossom Avenue. The Corridor 3 alignment diverges from the Corridor 2 alignment east of S.H. 112, and follows a slightly more southerly route. The alignment follows a relatively straight path from its eastern terminus toward Healing Springs. The alignment passes south of Healing Springs, and has a distance of 7.71 miles.

Corridor 4 – The Corridor 4 alignment has a terminus at the junction of U.S. 62/71 near Wagon Wheel Road. The alignment crosses S.H. 112 north of Elm Springs, and from there follows a relatively straight path to the northwest toward XNA. The distance of the Corridor 4 alignment is 7.31 miles.

Corridor 5 – The eastern terminus of Corridor 5 is at U.S. 62/71 just south of Spring Creek. The Corridor 5 alignment diverges from Corridor 4 at S.H. 112. Between S.H. 112 and S.H. 264 (immediately south of XNA), Corridor 5 continues directly westbound (south of Corridor 4) until a point south of Healing Springs. From that point the corridor turns north into the airport. The Corridor 5 alignment has a distance of 7.47 miles.

Corridor 6 – The Corridor 6 alignment is the shortest of the six being considered for implementation, at 6.29 miles. The alignment has a terminus at U.S. 412 west of Tontitown, near the Benton-Washington County line. From U.S. 412, the alignment follows a brief northeast path until it turns directly north for the majority of its length, and enters the airport terminal road system in a slightly northwest direction.

EXISTING TRAFFIC CHARACTERISTICS

A review was made of the traffic trends within the study area. Specifically, annual average daily traffic (AADT) counts from permanent automatic traffic recorders maintained by the Arkansas State Highway and Transportation Department (AHSTD) on critical federal and state highways within the study area were obtained and analyzed. The traffic trend data provided insight into how recent transportation demand in the area has evolved. The current traffic count volumes also provided an important basis upon which the traffic diversion model was developed.

ANNUAL TRAFFIC TRENDS

Trends in AADT volumes at selected highway locations are presented in Table 1. The highway locations chosen represent a cross-section of typical traffic volumes within the study area. Two locations on U.S. 71, just north and south of S.H. 264 are included, as well as count locations on S.H. 264 (from which a majority of the traffic potential to the Access Road would be drawn), S.H. 112 (which bisects the corridor alignment), and S.H. 12, S.H. 102, and S.H. 279 (all of which are north of the Access Road corridor alignment).

U.S. 71 – The routes with the highest volumes of traffic within the project study area are on U.S. 71. At the count location on U.S. 71 south of S.H. 264, AADT grew from 17,890 in 1990 to

Table 1

Trends in Annual Average Daily Traffic at Selected Highway Locations

| Year | U.S. 71 South of S.H. 264 | | U.S. 71 North of S.H. 264 | | S.H. 264 West of U.S. 71 | | S.H. 112 at S.H. 264 | | S.H. 264 at Healing Springs | | S.H. 12 North of S.H. 264 | | S.H. 112 South of S.H. 12 | | S.H. 102 West of U.S. 71 Business | | S.H. 279 North of S.H. 12 | |
|--|------------------------------|-------------------|------------------------------|-------------------|-----------------------------|-------------------|-------------------------|-------------------|--------------------------------|-------------------|------------------------------|-------------------|------------------------------|-------------------|--------------------------------------|-------------------|------------------------------|-------------------|
| | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change | AADT | Percent Change |
| | | | | | | | | | | | | | | | | | | |
| 1990 | 17,890 | --- | 15,700 | --- | 2,750 | --- | 4,010 | --- | 1,690 | --- | 1,290 | --- | 2,020 | --- | 7,030 | --- | 180 | --- |
| 1991 | 17,280 | -3.4% | 16,540 | 5.4% | 2,810 | 2.2% | 4,080 | 1.7% | 1,270 | -24.9% | 780 | -39.5% | 1,790 | -11.4% | 7,260 | 3.3% | 260 | 44.4% |
| 1992 | 17,680 | 2.3% | 16,920 | 2.3% | 2,960 | 5.3% | 4,290 | 5.1% | 1,340 | 5.5% | 820 | 5.1% | 2,250 | 25.7% | 7,720 | 6.3% | 270 | 3.8% |
| 1993 | 18,100 | 2.4% | 17,330 | 2.4% | 3,090 | 4.4% | 4,490 | 4.7% | 1,400 | 4.5% | 860 | 4.9% | 2,100 | 6.7% | 8,150 | 5.6% | 290 | 7.4% |
| 1994 | 25,000 | 38.1% | 25,000 | 44.3% | 3,200 | 3.6% | 4,100 | -8.7% | 1,800 | 28.6% | 1,400 | 62.8% | 2,100 | 0.0% | 9,000 | 10.4% | 200 | -31.0% |
| 1995 | 25,550 | 2.2% | 25,000 | 0.0% | 3,700 | 15.6% | 4,000 | -2.4% | 1,900 | 5.6% | 1,460 | 4.3% | 1,900 | -9.5% | 9,600 | 6.7% | 580 | 190.0% |
| 1996 | 29,000 | 13.5% | 29,000 | 16.0% | 3,600 | -2.7% | 4,100 | 2.5% | 1,800 | -5.3% | 1,700 | 16.4% | 2,200 | 15.8% | 8,300 | -13.5% | 800 | 37.9% |
| 1997 | 32,000 | 10.3% | 32,000 | 10.3% | 4,400 | 22.2% | 4,300 | -4.9% | 1,900 | 5.6% | 1,700 | 0.0% | 2,300 | 4.5% | 11,000 | 32.5% | 1,300 | 62.5% |
| 1998 | 35,000 | 9.4% | 32,000 | 0.0% | 4,200 | -4.5% | 4,800 | 11.6% | 2,100 | 10.5% | 1,600 | -5.9% | 2,400 | 4.3% | 9,200 | -16.4% | 1,300 | 0.0% |
| <u>Average Annual Percentage Change:</u> | | | | | | | | | | | | | | | | | | |
| 1990-1994 | 8.7% | | 12.3% | | 3.9% | | 0.6% | | 1.6% | | 2.1% | | 1.0% | | 6.4% | | 7.7% | |
| 1994-1998 | 8.8% | | 6.4% | | 7.0% | | 4.0% | | 3.9% | | 3.4% | | 3.4% | | 0.6% | | 59.7% | |
| 1990-1998 | 8.8% | | 9.3% | | 5.4% | | 2.3% | | 2.8% | | 2.7% | | 2.2% | | 3.4% | | 28.0% | |

Source: Arkansas State Highway and Transportation Department

35,000 in 1998, an annual average growth of 8.8 percent. The count location on U.S. 71 just north of S.H. 264 has a slightly lower AADT, but has exhibited slightly faster growth. At this location, AADT grew from 15,700 in 1990 to 32,000 in 1998, an average growth of 9.3 percent per year.

S.H. 264 – Traffic volumes on S.H. 264 are considerably lower than those on U.S. 71. At the location on S.H. 264 just west of U.S. 71, AADT grew from 2,750 in 1990 to 4,200 in 1998, an annual average growth of 5.4 percent. Farther to the west on S.H. 264 at Healing Springs, immediately east of the XNA entrance road, AADT grew from 1,690 in 1990 to 2,100 in 1998, an average growth of 2.8 percent per year.

S.H. 112 – S.H. 112 bisects the Access Road alignments that connect to U.S. 71. At S.H. 264, AADT on S.H. 112 grew by an average of 2.3 percent per year between 1990 (4,010 vehicles per day) and 1998 (4,800 vehicles per day). At the permanent automatic traffic recorder on S.H. 112 south of S.H. 12, AADT grew by a similar rate (2.2 percent per year), from 2,020 in 1990 to 2,400 in 1998.

Other State Routes – West of XNA on S.H. 12, north of S.H. 264, AADT grew from 1,290 in 1990 to 1,600 in 1998, an average growth of 2.7 percent per year. Within the northern portion of the study area, at S.H. 102 west of Business U.S. 71 in Bentonville, AADT grew from 7,030 in 1990 to 9,200 in 1998, an average annual growth of 3.4 percent. To the north of the northern access road to XNA, AADT on S.H. 279 grew from 180 in 1990 to 1,300 in 1998, an average annual growth of 28.0 percent per year; this significant growth is due to the development of XNA (which opened in November 1998), and the opening of its northern access road.

CORRIDOR GROWTH CHARACTERISTICS

The corridor growth review contained in this section was conducted to assess the extent to which existing levels of travel demand within the project study area can be expected to grow in the future, particularly with the addition of the Access Road. WSA evaluated the socioeconomic trends and forecasts for the study area that would likely influence the traffic estimates for the proposed Access Road. Data was collected from a variety of sources at the national, state, and local levels covering key growth indicators. Passenger and cargo trends for XNA were also examined, and factored into the growth analysis.

REGIONAL OVERVIEW

Northwest Arkansas is one of the fastest-growing regions in the state of Arkansas. The urbanized areas of Northwest Arkansas consist of the Fayetteville-Springdale-Rogers Metropolitan Statistical Area (MSA), which includes all of Benton and Washington counties. According to the United States Department of Commerce (USDoC), between 1970 and 1997, population grew by 182 percent in Benton County and 77 percent in Washington County. The MSA experienced a 108 percent increase during the period. Estimates are that the MSA will have increased another 7 percent by the end of this year (2000). Despite the considerable recent growth in regional population, it has been far outpaced by employment growth. Since 1970, total

employment has grown by 239 percent in Benton County, 149 percent in Washington County, and 184 percent within the MSA.

Personal income is derived from a diverse economy. In 1997, employment in manufacturing accounted for 23 percent of income in the MSA. Retail trade accounted for 18 percent, with services right behind at 17 percent. State and local government accounted for 10 percent, and the transportation, public utilities, and communications sector accounted for 8 percent (USDaC). The estimated unemployment rate within the MSA was 2.5 percent in January 2000 (Economagica.com).

Northwest Arkansas has a strong and diversified economic base with the headquarters for Wal-Mart, J.B. Hunt, and Tyson Foods. Other major economic contributors include Cargill, Campbell Soup, Levi Strauss, Washington Regional Medical Center, the Veteran's Hospital, and the University of Arkansas. In response to the increasing infrastructure demands within the area, and in order to enhance business growth, XNA was constructed near Highfill, Arkansas, southwest of Bentonville. The centrally-located site was selected to provide short travel distances to the airport from populated areas, but remote enough to minimize potentially adverse impacts such as noise on any of the area's major cities.

Northwest Arkansas Regional Airport (XNA) – XNA was opened to commercial air traffic in November 1998 as a replacement to Drake Field in Fayetteville, which has since been designated as a general aviation airport. The construction of XNA opened the fast-growing Northwest Arkansas to greatly-improved passenger and cargo air access.

Total passenger activity (enplanements and deplanements) at XNA has grown considerably since its opening in November 1998. Total passenger activity at XNA grew from 25,335 total passengers in November 1998 (13,106 enplanements and 12,229 deplanements) to 55,926 (28,650 enplanements and 27,276 deplanements) in December 1999. During that span, total passenger activity grew by an average of 6.3 percent per month. Clearly, there are seasonal variations which would further impact that growth rate. October 1999 was the peak passenger travel month at XNA, when a total of 64,771 passengers passed through the airport. The "ramp-up" period of growth for passenger traffic at the airport since its opening seems to have been four months. That is, after the fourth month of activity at XNA (February 1999), more normal (seasonal) patterns of monthly variation in passenger activity seem to have taken the place of sheer growth in traffic from month-to-month. According to information provided by Barnard Dunkelberg & Co., the Federal Aviation Administration (FAA) has forecast passenger enplanements to grow by an average of 3.4 percent per year through 2020.

Cargo activity at XNA appears to have grown at even more significant rates. Total cargo activity, including mail and freight, has grown from a combined total of 3,000 lbs. in November 1998 to a total of 24,586 lbs. in December 1999. This represents an average monthly growth rate of 17.6 percent. The ramp-up period of growth in cargo activity seems to have been longer than that for passenger activity (eleven months, through September 1999).

XNA Development Plan – Within the next 20 years, a considerable amount of development activity is anticipated to occur within the vicinity of XNA. The following is a list of known developments planned for implementation:

- A 100-room hotel to be constructed by 2004 east of the airport, on the north side of S.H. 264;
- A 200-acre golf course, also to be constructed by 2004 east of the airport, north of S.H. 264;
- Construction of cargo facilities for Ozark Aircraft Systems (OAS) and Tyson Foods on airport property immediately east of the XNA runway, growing from 5 acres in 2004 to 10 acres by 2010;
- A 15-acre office park to be constructed by 2010 at the southeast quadrant of the intersection of Regional Avenue and S.H. 12;
- The construction of a 30-acre aviation industrial park immediately west of the XNA runway by 2015, with expansion to 60 acres by 2020; and
- The construction of general aviation facilities on 15 acres west of the XNA runway (south of the planned aviation industrial park) by 2015, with expansion to 30 acres by 2020.

The airport will clearly be a focal point for future development and infrastructure expansion over the next twenty years. The construction of the Access Road, and it's possible future improvements (such as it's expansion to four lanes and the construction of an interchange at S.H. 112), will enhance the accessibility of these developments. Additionally, the implementation of these developments at the airport will potentially provide important support to patronage of the Access Road, once constructed.

POPULATION AND EMPLOYMENT TRENDS AND PROJECTIONS

Population represents a source of trip productions in traffic studies. Strong population growth can be associated with the need for greater provision of infrastructure, including transportation. Employment statistics are used as a relative indicator of trip attractions to an area. Strong and stable employment growth in an area indicates the potential for a proportional increase in the demand for transportation infrastructure. Population and employment trends and projections (Table 2) provide particular insight into the recent growth within the study area, as well as a vision for future growth. The counties within the study area (Benton and Washington), as well as the Fayetteville-Springdale-Rogers MSA, have grown at rates well above the state and national averages. A graphic comparison of population and employment trends and projections is presented in Figure 2. The relative strength of Northwest Arkansas in terms of population (and particularly) employment growth compared to the state and nation is evident.

Population – Population growth has been particularly strong in Benton County. Within Benton County, population grew by an average of 4.1 percent per year between 1990 and 1997, compared with statewide and national average annual growth of 1.0 percent. Within the MSA, population grew by an average of 3.4 percent per year during the same period. Projections of

Table 2

Population and Employment Trends and Projections

| Jurisdiction | 1990 | Average Annual Percent Change | 1997 | Average Annual Percent Change | 2000 | Average Annual Percent Change | 2005 | Average Annual Percent Change | 2010 | Average Annual Percent Change | 2025 | Average Annual Percent Change (1997-2025) |
|------------------------------------|-------------|--|-------------|--|-------------|--|-------------|--|-------------|--|-------------|---|
| Population | | | | | | | | | | | | |
| Fayetteville-Springdale-Rogers MSA | 212,450 | 3.4% | 267,760 | 2.1% | 285,310 | 2.1% | 316,060 | 1.9% | 347,020 | 1.6% | 441,950 | 1.8% |
| Benton County | 98,320 | 4.1% | 130,440 | 3.3% | 143,880 | 3.1% | 167,560 | 2.7% | 191,200 | 2.1% | 262,710 | 2.5% |
| Washington County | 114,130 | 2.7% | 137,320 | 1.0% | 141,430 | 1.0% | 148,500 | 1.0% | 155,820 | 0.9% | 179,240 | 1.0% |
| State of Arkansas | 2,354,330 | 1.0% | 2,523,090 | 0.8% | 2,587,960 | 0.9% | 2,701,840 | 0.9% | 2,819,670 | 0.8% | 3,191,130 | 0.8% |
| United States | 249,440,650 | 1.0% | 267,744,030 | 0.9% | 275,205,750 | 0.8% | 286,608,530 | 0.6% | 295,405,830 | 0.9% | 335,870,690 | 0.8% |
| Employment | | | | | | | | | | | | |
| Fayetteville-Springdale-Rogers MSA | 128,250 | 4.8% | 178,530 | 3.6% | 198,790 | 2.4% | 224,090 | 2.1% | 248,670 | 1.5% | 312,970 | 2.0% |
| Benton County | 57,180 | 5.5% | 82,960 | 4.1% | 93,640 | 2.9% | 107,910 | 2.5% | 122,150 | 1.9% | 161,440 | 2.4% |
| Washington County | 71,070 | 4.3% | 95,570 | 3.2% | 105,150 | 2.0% | 116,180 | 1.7% | 126,520 | 1.2% | 151,530 | 1.7% |
| State of Arkansas | 1,209,850 | 2.4% | 1,430,550 | 2.2% | 1,528,080 | 1.5% | 1,644,450 | 1.3% | 1,756,430 | 1.1% | 2,083,030 | 1.4% |
| United States | 139,184,590 | 1.7% | 156,410,390 | 2.1% | 166,657,020 | 1.3% | 177,620,320 | 1.2% | 188,290,790 | 1.1% | 222,228,790 | 1.3% |

Note: Historical population and employment, 1990-1997, is from U.S. Department of Commerce (USDoC).

Source: Woods & Poole Economics, Inc., 2000.

population growth are expected to follow the same pattern. Between 1997 and 2025, population within Benton County is expected to grow by 2.5 percent per year, compared with statewide and national projections of 0.8 percent. Population within the MSA is expected to grow by an average of 1.8 percent per year between 1997 and 2025.

Employment – Within Benton County, employment grew by an average of 5.5 percent per year between 1990 and 1997, compared with statewide and national average annual growth of 2.4 percent and 1.7 percent, respectively. Within the MSA, employment grew by an average of 4.8 percent per year between 1990 and 1997. Projections of employment growth are expected to follow the same pattern. Between 1997 and 2025, employment within Benton County is expected to grow by 2.4 percent per year, compared with statewide and national projections of between 1.3 and 1.4 percent. Through 2025, employment within the MSA is expected to grow by an average of 2.0 percent per year.

ESTIMATED GROWTH AND DEVELOPMENT POTENTIAL: CORRIDOR GROWTH CONCLUSIONS

For the purpose of estimating the traffic and toll revenue potential on the proposed Access Road throughout the projection period (2005 through 2035), WSA developed a growth schedule that was applied to estimated base-year traffic and toll revenue. This reflects both additional development which might be expected to occur as a result of the construction of the Access Road and increased travel from those now living and working in the study area as a result of improved accessibility provided by the project.

Estimated traffic growth has two components: (1) normal growth resulting from the increase in travel demand which would result from existing developments, and (2) induced travel growth. The normal growth represents the additional trips that would occur each year regardless of the presence of the Access Road. The induced growth reflects additional development (and therefore, vehicle trips) which might be expected to occur due to the construction of the Access Road. Given the current profile of development and the plans for future development at XNA, there appears to be a great potential for additional travel demand in the future within the study area.

The presence of companies such as Wal-Mart, J.B. Hunt, and Tyson Foods as stable engines for economic growth within Northwest Arkansas have provided for historically strong levels of population and employment growth. The presence of XNA will likely enhance the region's economic stability. Based on the results of the corridor growth analysis, WSA estimates normal annual traffic growth within the corridor to range between 5 percent after the first year of the project, down to 4 percent after the fifth year. Thereafter, annual traffic growth was estimated to decline slightly each year, down to 1 percent per year in the later-years of the projection period.

While it is impossible at this point to quantify in exact terms the magnitude of additional future development-induced that might occur directly as a result of the Access Road, WSA has estimated on a percentage basis the amount of induced growth that might occur above and beyond normal growth. Annually induced traffic growth ranges from 5 percent after the first full year of the Access Road's operation, declining by 1 percentage point each year over the first five years of the project.

TRAFFIC AND REVENUE ESTIMATES

Estimates of traffic and toll revenue for the proposed Access Road are based on the volume of traffic that would be diverted from existing routes within the study area, plus induced traffic resulting from the implementation of direct access to the airport. Motorists would be expected to divert to the Access Road due to the time or distance savings afforded over the existing highway system, after recognizing the cost of tolls. The following section provides an overview of the methodologies utilized to arrive at the estimates of traffic and revenue associated with the implementation of the proposed Access Road.

TRAFFIC MODELING AND ANALYSIS METHODOLOGY

A comprehensive computer highway network was developed as part of this study. The basic purpose of the model was to test patrons' willingness to use the Access Road under the different tolling conditions. A toll-free traffic assignment was run to determine the total universe of potential users. When tolls are not applied, motorists will typically choose the route they believe will get them to their destination in the minimum amount of time. Factors such as roadway quality, convenience, predictability of conditions, and familiarity with alternate routes may also influence a motorist's decision. Typically, however, minimum travel time is the major contributing factor in the decision process.

When a toll is added to the equation, however, out-of-pocket expenditures are required for the trip, and the motorist must then evaluate whether the time savings, and other benefits of using the Access Road (i.e., roadway quality, convenience, predictability of conditions, etc.) are worth the monetary investment. In cases where the toll facility offers very high levels of time savings, and where relatively low tolls are imposed, the proportional share of motorists using the new facility may approach 100 percent. As toll rates are increased, however, or for those travel movements for which the Access Road provides only marginal time savings, the proportional share choosing the new facility may be much lower.

A special diversion model, developed specifically for estimating motorists' responses to varying levels of toll charges, was used for this study. The model develops a cost ratio between the Access Road and the best alternate (existing) route for all origin-destination pairs in the network. Costs are a function of some monetary equivalent of distance (operating cost), travel time, and the actual toll charges. An "S-shaped" probability curve is used to relate the cost ratio to diversion potential. If the total cost of using the alternate route greatly exceeds that of the Access Road for a particular movement, a majority of the trips will be assigned to the Access Road. As the cost ratio approaches 1.0 (i.e., the costs are essentially equal for both paths) the market share will be approximately 50 percent for each facility. If the costs of using the Access Road are increased such that its cost greatly exceeds that of using the alternate routes, there will not be a significant level of traffic that will divert to the Access Road.

An extensive corridor route reconnaissance program was undertaken by CH2M Hill to determine alternate route distances, average operating speeds, and the general condition of the existing roadway system. Speeds and travel times were recorded for various times of the day on all major competing and complementary routes to the proposed Access Road. These data were used as

input to the portion of the diversion model that calculates the cost ratios for the various movements within the highway network.

The traffic component of the model was based on the latest annual average daily count information for the roadways within the project study area, as provided by the ASHTD, as well as traffic counts conducted by CH2M Hill on the local road system around XNA. The diversion model described above was used to determine the percentage of existing traffic that would divert to the Access Road. Using the traffic counts, points-of-choice were developed within the network where motorists traveling on the local highway network would have to make a decision as to whether or not to use the Access Road (versus existing routes) to access the airport. The model calculates cost ratios for each point-of-choice selection, and a diversion factor applied to all trips making that particular movement.

PROPOSED TOLL COLLECTION SYSTEM AND TOLL RATES

The proposed toll collection system and toll rates are presented in Figure 3. In the interim phase implementation, the proposed Access Road would be a two-lane, limited-access toll facility with interchanges at S.H. 264 and either U.S. 71 (under configuration Scenarios 1 through 5) or U.S. 412 (under configuration Scenario 6). The main toll collection point would be at a single mainline plaza on the south terminal access road, between Regional Avenue and the loop around the XNA terminal. Ramp toll collection would also be situated at S.H. 264 on the ramps to and from the south.

The toll collection at the mainline plaza is intended to intercept all traffic which had used the Access Road, as well any additional traffic entering the airport terminal, either from S.H. 264 or from Regional Avenue. Toll collection for airport access, as well as collection of parking fees, will take place jointly at the mainline plaza. The ramps on S.H. 264 are intended to intercept traffic using the Access Road that does not access the airport roadway system. In this fashion, the toll collection points were designed to prohibit any toll-free movements either on the Access Road, or the roadway system leading into the airport terminal. The following are all of the possible tolled movements on the Access Road leading into the terminal:

1. Traffic which moves between U.S. 71 (or U.S. 412) and the XNA terminal, which is intercepted at the mainline barrier toll plaza;
2. Traffic which moves between U.S. 71 (or U.S. 412) and S.H. 264, which is intercepted at the ramp toll collection points at S.H. 264;
3. Traffic which moves between S.H. 264 and the XNA terminal, which is intercepted at the mainline barrier toll plaza; and
4. Traffic which moves between Regional Avenue and the XNA terminal, which is intercepted at the mainline barrier toll plaza.

Channelization will be provided which will allow toll-free movement between S.H. 264 and Regional Avenue.

A passenger car toll rate of \$1.00 was used in the diversion analysis and calculation of toll revenue presented in the following series of tabulations. Toll rates for commercial vehicles were assumed to be proportionally higher than passenger car toll rates. Toll rates for vehicles with more than two axles were increased for each additional axle by a factor of 1. In effect, all vehicles were charged a \$1.00 toll entering the XNA terminal and another \$1.00 exiting the terminal. In reality, WSA recommends that patrons entering the terminal roadway system be given a ticket indicating entry, and upon exiting the terminal, be charged a fee of \$2.00. WSA understands that the Authority envisions any parking fees associated with the airport to be transacted at this point, as well. It is important to understand that the toll revenue estimated by WSA in this document includes only toll revenue; any parking fees would be assessed above and beyond the fees collected for access to the terminal roadway system.

BASIC ASSUMPTIONS

The traffic and revenue estimates presented in this report are predicated on the following basic assumptions:

1. The Access Road, and the concurrent modifications to the roadway structure around XNA will open to traffic on January 1, 2005, generally as described in this document.
2. The Access Road will be implemented as a two-lane toll facility, as described herein, with interchanges at U.S. 71 or U.S. 412 and S.H. 264, and no intermediate access points. The Access Road configuration as constructed, will permit no toll-free movements. The toll revenue estimates provided herein do not incorporate any element of toll evasion, or toll-free movements on the Access Road.
3. A fully-attended system of toll collection is assumed at the mainline toll barrier that will be located within the XNA terminal roadway system. Unattended toll collection was assumed on the ramps to and from the south at S.H. 264. No provision for electronic toll collection was assumed as part of this preliminary study, although it could potentially allow for greater efficiency and variable pricing (i.e., discounts) for local patrons and XNA employees.
4. No toll rate increase will take place throughout the forecast period.
5. No competing, limited-access roadways will be constructed at any time during the forecast period.
6. The Access Road will be well-maintained, efficiently operated, and effectively signed to encourage maximum usage.
7. The toll revenue estimated by WSA and presented in this report includes only revenue generated from the collection of roadway user-fees at the toll facility located within the terminal roadway system, as well as toll revenue collected on the ramps at S.H. 264. Parking revenue was not estimated by WSA.

Any significant departure from these basic assumptions could materially affect estimates of transactions and toll revenue contained herein.

TOLL SENSITIVITY ANALYSIS

A series of traffic assignments were run to test the sensitivity of motorists to increasingly higher toll rates on the Access Road. The primary purpose of this exercise was to determine the "optimum" toll rate to implement, that is, the lowest toll amount that would maximize toll revenue and potentially meet the funding requirements of the project. As evident in the year 2005 toll sensitivity curve presented in Figure 4, toll revenue would be maximized at passenger car toll rate of between \$1.00 and \$1.25.

FEASIBILITY ANALYSIS

The feasibility analysis combined the estimates of net toll revenue projected for each corridor configuration along with estimated capital costs. To develop net toll revenue estimates, estimates of maintenance and operating costs and reserve maintenance deposits were subtracted out of estimated gross toll revenue.

As the mainline toll facility will be a common facility for collection of airport access fees and parking fees, the costs incurred (i.e., personnel and equipment) were be allocated to both centers based on the percentage of revenue collected by each. However, the maintenance and operating cost estimates for toll collection did not include the cost of collecting parking fees, which were assumed to be \$12,000 per month (\$144,000 per year) in 2005. Estimates of maintenance and operating costs for the roadway structure were based on a per-lane, per-mile cost of \$1,500 in 2005. All base-year maintenance and operating cost estimates were inflated by 5 percent per year throughout the forecast period. Annual reserve maintenance desposits were assumed to be 20 percent of total maintenance and operating costs.

Estimates for project capital costs for roadway construction and toll collection were developed by CH2M Hill. From these capital costs, a TEA-21 grant of \$14.4 million, and a contribution from XNA of \$4.7 million were subtracted to calculate the total amount of debt to be serviced under each corridor configuration. A bond term of 30 years was assumed. Given this bond term, a bond earning period of 27 years was used to calculate the annual level debt service requirements assuming an interest rate of 7 percent.

Also incorporated into the feasibility calculation are the costs capitalized interest (assuming 36 months at 7 percent on the debt), as well as the cost of the bond issuance (assumed to be 3 percent of the issue.

Debt coverage is calculated by subtracting the annual level debt service requirements from the annual net toll revenue. The ratio of annual net toll revenue to debt service requirements is also presented for each corridor, as well as the revenue surplus/shortfall. In revenue bond financing for start-up toll facilities, bond rating agencies typically require a debt service coverage ratio of 1.25 for start-up toll facilities in order to provide an investment-grade bond rating. This is to provide bondholders with a certain level of financial security.

For toll road projects that are being studied on a preliminary basis, such as the Access Road, WSA generally suggests that a bond coverage ratio of 1.00 or higher indicates that the project warrants further consideration for implementation and investment as a toll road. Projects whose debt coverage ratio is slightly below 1.00 (and grows above 1.00 within the first few years of implementation) are also justified as candidates for further consideration. Under an investment-grade level of analysis, the conduct of origin-destination surveys to augment the traffic analysis, a more detailed economic growth analysis, further refinement in capital, maintenance and operating and bond costs, as well as innovative approaches to project financing can often enhance project feasibility.

CORRIDOR 1

The preliminary feasibility calculations for the Corridor 1 Access Road configuration are discussed in the following sections. Estimates of toll transactions and gross and net toll revenue under the Corridor 1 scenario are presented. Following this, estimates of annual level debt service requirements are presented. Finally, annual debt service coverage ratios for Corridor 1 are calculated.

Estimated Toll Transactions and Net Toll Revenue – Estimated toll transactions and net toll revenue for the Corridor 1 alignment are presented in Table 3A. Estimated average daily toll transactions are estimated to grow from 4,900 in opening-year 2005 to 12,500 in design-year 2035. The resultant toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system is estimated to grow from \$2.180 million in 2005 to \$5.411 million in 2035. Net toll revenue, which is total toll revenue less total maintenance and operating costs and reserve maintenance deposit, is estimated to grow from \$1.978 million in 2005 to \$4.537 million in 2035.

Estimated Annual Debt Service Requirements – Table 3B provides information regarding the calculation of the annual level debt service requirements for the Corridor 1 alignment. The total estimated capital cost is \$38.531 million. After TEA-21 and XNA assistance are subtracted out and bond costs added, the total debt to be serviced is \$24.849 million. The estimated annual level debt service is \$2.042 million.

Estimated Annual Debt Service Coverage – The estimated annual debt service coverage for the Corridor 1 alignment is presented in Table 3C. The debt coverage ratio is 0.95 in 2005 and grows to 2.19 in 2035. Debt service is expected to exceed net revenue in only the first year of the projection period.

CORRIDOR 2

The preliminary feasibility calculations for the Corridor 2 Access Road configuration are discussed in the following sections. Estimates of toll transactions and gross and net toll revenue under the Corridor 2 scenario are presented. Following this, estimates of annual level debt service requirements are presented. Finally, annual debt service coverage ratios for Corridor 2 are calculated.

Table 3A

Estimated Toll Transactions and Net Toll Revenue
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 1

| Year | Estimated Average Daily Toll Transactions | Estimated Annual Toll Revenue (1) | Maintenance and Operating Costs | | | Reserve Maintenance Deposit (3) | Net Toll Revenue |
|------|--|---|------------------------------------|------------------------|-----------|---------------------------------------|---------------------|
| | | | Roadway (2) | Toll Collection (2) | Total | | |
| 2005 | 4,900 | \$2,180,000 | \$24,000 | \$144,000 | \$168,000 | \$34,000 | \$1,978,000 |
| 2006 | 5,400 | 2,398,000 | 26,000 | 151,000 | 177,000 | 35,000 | 2,186,000 |
| 2007 | 6,000 | 2,602,000 | 27,000 | 159,000 | 186,000 | 37,000 | 2,379,000 |
| 2008 | 6,400 | 2,797,000 | 28,000 | 167,000 | 195,000 | 39,000 | 2,563,000 |
| 2009 | 6,800 | 2,979,000 | 30,000 | 175,000 | 205,000 | 41,000 | 2,733,000 |
| 2010 | 7,100 | 3,128,000 | 31,000 | 184,000 | 215,000 | 43,000 | 2,870,000 |
| 2011 | 7,400 | 3,253,000 | 33,000 | 193,000 | 226,000 | 45,000 | 2,982,000 |
| 2012 | 7,700 | 3,384,000 | 34,000 | 203,000 | 237,000 | 47,000 | 3,100,000 |
| 2013 | 8,000 | 3,502,000 | 36,000 | 213,000 | 249,000 | 50,000 | 3,203,000 |
| 2014 | 8,300 | 3,624,000 | 38,000 | 224,000 | 262,000 | 52,000 | 3,310,000 |
| 2015 | 8,600 | 3,750,000 | 40,000 | 235,000 | 275,000 | 55,000 | 3,420,000 |
| 2016 | 8,900 | 3,863,000 | 42,000 | 247,000 | 289,000 | 58,000 | 3,516,000 |
| 2017 | 9,200 | 3,979,000 | 44,000 | 259,000 | 303,000 | 61,000 | 3,615,000 |
| 2018 | 9,500 | 4,099,000 | 46,000 | 272,000 | 318,000 | 64,000 | 3,717,000 |
| 2019 | 9,800 | 4,201,000 | 48,000 | 286,000 | 334,000 | 67,000 | 3,800,000 |
| 2020 | 10,000 | 4,306,000 | 51,000 | 300,000 | 351,000 | 70,000 | 3,885,000 |
| 2021 | 10,200 | 4,414,000 | 53,000 | 315,000 | 368,000 | 74,000 | 3,972,000 |
| 2022 | 10,400 | 4,502,000 | 56,000 | 331,000 | 387,000 | 77,000 | 4,038,000 |
| 2023 | 10,600 | 4,593,000 | 58,000 | 348,000 | 406,000 | 81,000 | 4,106,000 |
| 2024 | 10,800 | 4,684,000 | 61,000 | 365,000 | 426,000 | 85,000 | 4,173,000 |
| 2025 | 11,000 | 4,778,000 | 64,000 | 383,000 | 447,000 | 89,000 | 4,242,000 |
| 2026 | 11,200 | 4,850,000 | 68,000 | 402,000 | 470,000 | 94,000 | 4,286,000 |
| 2027 | 11,400 | 4,923,000 | 71,000 | 422,000 | 493,000 | 99,000 | 4,331,000 |
| 2028 | 11,600 | 4,997,000 | 75,000 | 443,000 | 518,000 | 104,000 | 4,375,000 |
| 2029 | 11,800 | 5,072,000 | 78,000 | 465,000 | 543,000 | 109,000 | 4,420,000 |
| 2030 | 12,000 | 5,148,000 | 82,000 | 488,000 | 570,000 | 114,000 | 4,464,000 |
| 2031 | 12,100 | 5,199,000 | 86,000 | 512,000 | 598,000 | 120,000 | 4,481,000 |
| 2032 | 12,200 | 5,251,000 | 91,000 | 538,000 | 629,000 | 126,000 | 4,496,000 |
| 2033 | 12,300 | 5,304,000 | 95,000 | 565,000 | 660,000 | 132,000 | 4,512,000 |
| 2034 | 12,400 | 5,357,000 | 100,000 | 593,000 | 693,000 | 139,000 | 4,525,000 |
| 2035 | 12,500 | 5,411,000 | 105,000 | 623,000 | 728,000 | 146,000 | 4,537,000 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

(2) Estimated by CH2M Hill.

(3) Reserve maintenance deposit was assumed to be 20 percent of total maintenance and operating costs.

Table 3B

Estimated Annual Debt Service Requirements
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 1

| Item | Corridor 1 |
|---|--------------|
| Estimated Project Capital Cost | |
| Roadway | \$30,417,000 |
| Toll Collection | 625,000 |
| Other Costs (1) | 7,489,000 |
| Total Capital Cost | \$38,531,000 |
| Less Assistance | |
| TEA-21 Grant | \$14,400,000 |
| XNA Contribution | 4,700,000 |
| Total Assistance | \$19,100,000 |
| Total Debt to be Serviced Before Bond Costs | \$19,431,000 |
| Bond Term | 30 Years |
| Bond Earning Period | 27 Years |
| Assumed Interest Rate | 7.0 Percent |
| Debt Service Factor | 0.0834 |
| Annual Level Debt Service Before Bond Costs | \$1,621,000 |
| Capitalized Interest (2) | 3,241,000 |
| Cost of Bond Issuance (3) | 556,000 |
| Subtotal of Additional Costs Due to Bond Costs | \$5,418,000 |
| Adjusted Debt Service Amount Including Bond Costs | \$24,849,000 |
| Revised Annual Debt Service Amount | \$2,072,000 |

(1) Includes costs for engineering, inspection, administration, legal, etc.

(2) Assumes 36 months at 7 percent on debt.

(3) Assumes 3 percent of issue.

Note: All capital cost estimates provided by CH2M Hill.

Table 3C

Estimated Annual Debt Service Coverage
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 1

| Year | Net Revenue | Level Debt Service | Debt Coverage Ratio | Annual Surplus/ (Shortfall) |
|------|----------------|--------------------------|---------------------------|-----------------------------------|
| 2005 | \$1,978,000 | \$2,072,000 | 0.95 | (\$94,000) |
| 2006 | 2,186,000 | 2,072,000 | 1.06 | 114,000 |
| 2007 | 2,379,000 | 2,072,000 | 1.15 | 307,000 |
| 2008 | 2,563,000 | 2,072,000 | 1.24 | 491,000 |
| 2009 | 2,733,000 | 2,072,000 | 1.32 | 661,000 |
| 2010 | 2,870,000 | 2,072,000 | 1.39 | 798,000 |
| 2011 | 2,982,000 | 2,072,000 | 1.44 | 910,000 |
| 2012 | 3,100,000 | 2,072,000 | 1.50 | 1,028,000 |
| 2013 | 3,203,000 | 2,072,000 | 1.55 | 1,131,000 |
| 2014 | 3,310,000 | 2,072,000 | 1.60 | 1,238,000 |
| 2015 | 3,420,000 | 2,072,000 | 1.65 | 1,348,000 |
| 2016 | 3,516,000 | 2,072,000 | 1.70 | 1,444,000 |
| 2017 | 3,615,000 | 2,072,000 | 1.74 | 1,543,000 |
| 2018 | 3,717,000 | 2,072,000 | 1.79 | 1,645,000 |
| 2019 | 3,800,000 | 2,072,000 | 1.83 | 1,728,000 |
| 2020 | 3,885,000 | 2,072,000 | 1.88 | 1,813,000 |
| 2021 | 3,972,000 | 2,072,000 | 1.92 | 1,900,000 |
| 2022 | 4,038,000 | 2,072,000 | 1.95 | 1,966,000 |
| 2023 | 4,106,000 | 2,072,000 | 1.98 | 2,034,000 |
| 2024 | 4,173,000 | 2,072,000 | 2.01 | 2,101,000 |
| 2025 | 4,242,000 | 2,072,000 | 2.05 | 2,170,000 |
| 2026 | 4,286,000 | 2,072,000 | 2.07 | 2,214,000 |
| 2027 | 4,331,000 | 2,072,000 | 2.09 | 2,259,000 |
| 2028 | 4,375,000 | 2,072,000 | 2.11 | 2,303,000 |
| 2029 | 4,420,000 | 2,072,000 | 2.13 | 2,348,000 |
| 2030 | 4,464,000 | 2,072,000 | 2.15 | 2,392,000 |
| 2031 | 4,481,000 | 2,072,000 | 2.16 | 2,409,000 |
| 2032 | 4,496,000 | 2,072,000 | 2.17 | 2,424,000 |
| 2033 | 4,512,000 | 2,072,000 | 2.18 | 2,440,000 |
| 2034 | 4,525,000 | 2,072,000 | 2.18 | 2,453,000 |
| 2035 | 4,537,000 | 2,072,000 | 2.19 | 2,465,000 |

Estimated Toll Transactions and Net Toll Revenue – Estimated toll transactions and net toll revenue for the Corridor 2 alignment are presented in Table 4A. Estimated average daily toll transactions are estimated to grow from 4,800 in 2005 to 12,200 in 2035. The resultant toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system is estimated to grow from \$2.135 million in 2005 to \$5.299 million in 2035. Net toll revenue is estimated to grow from \$1.934 million in 2005 to \$4.433 million in 2035.

Estimated Annual Debt Service Requirements – Table 4B provides information regarding the calculation of the annual level debt service requirements for the Corridor 2 alignment. The total estimated capital cost is \$41.526 million. After TEA-21 and XNA assistance are subtracted out and bond costs added, the total debt to be serviced is \$28.675 million. The estimated annual level debt service is \$2.391 million.

Estimated Annual Debt Service Coverage – The estimated annual debt service coverage for the Corridor 2 alignment is presented in Table 4C. The debt coverage ratio is 0.81 in 2005, reaches 1.05 in 2008 and grows to 1.85 in 2035. Debt service is expected to exceed net revenue in the first three years of operation.

CORRIDOR 3

The preliminary feasibility calculations for the Corridor 3 Access Road configuration are discussed in the following sections. Estimates of toll transactions and gross and net toll revenue under the Corridor 3 scenario are presented. Following this, estimates of annual level debt service requirements are presented. Finally, annual debt service coverage ratios for Corridor 3 are calculated.

Estimated Toll Transactions and Net Toll Revenue – Estimated toll transactions and net toll revenue for the Corridor 3 alignment are presented in Table 5A. Estimated average daily toll transactions are estimated to grow from 4,600 in 2005 to 11,600 in 2035. The resultant toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system is estimated to grow from \$2.046 million in 2005 to \$5.080 million in 2035. Net toll revenue is estimated to grow from \$1.846 million in 2005 to \$4.212 million in 2035.

Estimated Annual Debt Service Requirements – Table 5B provides information regarding the calculation of the annual level debt service requirements for the Corridor 3 alignment. The total estimated capital cost is \$40.331 million. After TEA-21 and XNA assistance are subtracted out and bond costs added, the total debt to be serviced is \$27.150 million. The estimated annual level debt service is \$2.264 million.

Estimated Annual Debt Service Coverage – The estimated annual debt service coverage for the Corridor 3 alignment is presented in Table 5C. The debt coverage ratio is 0.82 in 2005, reaches 1.06 in 2008 and grows to 1.86 in 2035. Debt service expected to exceed net revenue in the first three years of operation.

Table 4A

Estimated Toll Transactions and Net Toll Revenue
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 2

| Year | Estimated Average Daily Toll Transactions | Estimated Annual Toll Revenue (1) | Maintenance and Operating Costs | | | Reserve Maintenance Deposit (3) | Net Toll Revenue |
|------|--|---|------------------------------------|------------------------|-----------|---------------------------------------|---------------------|
| | | | Roadway (2) | Toll Collection (2) | Total | | |
| 2005 | 4,800 | \$2,135,000 | \$23,000 | \$144,000 | \$167,000 | \$33,000 | \$1,935,000 |
| 2006 | 5,300 | 2,349,000 | 24,000 | 151,000 | 175,000 | 35,000 | 2,139,000 |
| 2007 | 5,800 | 2,549,000 | 25,000 | 159,000 | 184,000 | 37,000 | 2,328,000 |
| 2008 | 6,200 | 2,740,000 | 26,000 | 167,000 | 193,000 | 39,000 | 2,508,000 |
| 2009 | 6,600 | 2,918,000 | 28,000 | 175,000 | 203,000 | 41,000 | 2,674,000 |
| 2010 | 6,900 | 3,064,000 | 29,000 | 184,000 | 213,000 | 43,000 | 2,808,000 |
| 2011 | 7,200 | 3,186,000 | 31,000 | 193,000 | 224,000 | 45,000 | 2,917,000 |
| 2012 | 7,500 | 3,314,000 | 32,000 | 203,000 | 235,000 | 47,000 | 3,032,000 |
| 2013 | 7,800 | 3,430,000 | 34,000 | 213,000 | 247,000 | 49,000 | 3,134,000 |
| 2014 | 8,100 | 3,550,000 | 35,000 | 224,000 | 259,000 | 52,000 | 3,239,000 |
| 2015 | 8,400 | 3,674,000 | 37,000 | 235,000 | 272,000 | 54,000 | 3,348,000 |
| 2016 | 8,600 | 3,784,000 | 39,000 | 247,000 | 286,000 | 57,000 | 3,441,000 |
| 2017 | 8,900 | 3,897,000 | 41,000 | 259,000 | 300,000 | 60,000 | 3,537,000 |
| 2018 | 9,200 | 4,015,000 | 43,000 | 272,000 | 315,000 | 63,000 | 3,637,000 |
| 2019 | 9,500 | 4,115,000 | 45,000 | 286,000 | 331,000 | 66,000 | 3,718,000 |
| 2020 | 9,700 | 4,218,000 | 47,000 | 300,000 | 347,000 | 69,000 | 3,802,000 |
| 2021 | 9,900 | 4,324,000 | 50,000 | 315,000 | 365,000 | 73,000 | 3,886,000 |
| 2022 | 10,100 | 4,410,000 | 52,000 | 331,000 | 383,000 | 77,000 | 3,950,000 |
| 2023 | 10,300 | 4,499,000 | 55,000 | 348,000 | 403,000 | 81,000 | 4,015,000 |
| 2024 | 10,500 | 4,589,000 | 58,000 | 365,000 | 423,000 | 85,000 | 4,081,000 |
| 2025 | 10,700 | 4,681,000 | 60,000 | 383,000 | 443,000 | 89,000 | 4,149,000 |
| 2026 | 10,900 | 4,751,000 | 64,000 | 402,000 | 466,000 | 93,000 | 4,192,000 |
| 2027 | 11,100 | 4,822,000 | 67,000 | 422,000 | 489,000 | 98,000 | 4,235,000 |
| 2028 | 11,300 | 4,894,000 | 70,000 | 443,000 | 513,000 | 103,000 | 4,278,000 |
| 2029 | 11,500 | 4,967,000 | 74,000 | 465,000 | 539,000 | 108,000 | 4,320,000 |
| 2030 | 11,700 | 5,041,000 | 77,000 | 488,000 | 565,000 | 113,000 | 4,363,000 |
| 2031 | 11,800 | 5,091,000 | 81,000 | 512,000 | 593,000 | 119,000 | 4,379,000 |
| 2032 | 11,900 | 5,142,000 | 85,000 | 538,000 | 623,000 | 125,000 | 4,394,000 |
| 2033 | 12,000 | 5,194,000 | 89,000 | 565,000 | 654,000 | 131,000 | 4,409,000 |
| 2034 | 12,100 | 5,246,000 | 94,000 | 593,000 | 687,000 | 137,000 | 4,422,000 |
| 2035 | 12,200 | 5,299,000 | 99,000 | 623,000 | 722,000 | 144,000 | 4,433,000 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

(2) Estimated by CH2M Hill.

(3) Reserve maintenance deposit was assumed to be 20 percent of total maintenance and operating costs.

Table 4B

Estimated Annual Debt Service Requirements
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 2

| Item | Corridor 2 |
|---|---------------------|
| Estimated Project Capital Cost | |
| Roadway | \$33,412,000 |
| Toll Collection | 625,000 |
| Other Costs (1) | 7,489,000 |
| Total Capital Cost | <u>\$41,526,000</u> |
| Less Assistance | |
| TEA-21 Grant | \$14,400,000 |
| XNA Contribution | 4,700,000 |
| Total Assistance | <u>\$19,100,000</u> |
| Total Debt to be Serviced Before Bond Costs | \$22,426,000 |
| Bond Term | 30 Years |
| Bond Earning Period | 27 Years |
| Assumed Interest Rate | 7.0 Percent |
| Debt Service Factor | 0.0834 |
| Annual Level Debt Service Before Bond Costs | \$1,870,000 |
| Capitalized Interest (2) | 3,738,000 |
| Cost of Bond Issuance (3) | 641,000 |
| Subtotal of Additional Costs Due to Bond Costs | <u>\$6,249,000</u> |
| Adjusted Debt Service Amount Including Bond Costs | \$28,675,000 |
| Revised Annual Debt Service Amount | <u>\$2,391,000</u> |

(1) Includes costs for engineering, inspection, administration, legal, etc.

(2) Assumes 36 months at 7 percent on debt.

(3) Assumes 3 percent of issue.

Note: All capital cost estimates provided by CH2M Hill.

Table 4C

Estimated Annual Debt Service Coverage
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 2

| Year | Net Revenue | Level Debt Service | Debt Coverage Ratio | Annual Surplus/ (Shortfall) |
|------|----------------|--------------------------|---------------------------|-----------------------------------|
| 2005 | \$1,935,000 | \$2,391,000 | 0.81 | (\$456,000) |
| 2006 | 2,139,000 | 2,391,000 | 0.89 | (252,000) |
| 2007 | 2,328,000 | 2,391,000 | 0.97 | (63,000) |
| 2008 | 2,508,000 | 2,391,000 | 1.05 | 117,000 |
| 2009 | 2,674,000 | 2,391,000 | 1.12 | 283,000 |
| 2010 | 2,808,000 | 2,391,000 | 1.17 | 417,000 |
| 2011 | 2,917,000 | 2,391,000 | 1.22 | 526,000 |
| 2012 | 3,032,000 | 2,391,000 | 1.27 | 641,000 |
| 2013 | 3,134,000 | 2,391,000 | 1.31 | 743,000 |
| 2014 | 3,239,000 | 2,391,000 | 1.35 | 848,000 |
| 2015 | 3,348,000 | 2,391,000 | 1.40 | 957,000 |
| 2016 | 3,441,000 | 2,391,000 | 1.44 | 1,050,000 |
| 2017 | 3,537,000 | 2,391,000 | 1.48 | 1,146,000 |
| 2018 | 3,637,000 | 2,391,000 | 1.52 | 1,246,000 |
| 2019 | 3,718,000 | 2,391,000 | 1.55 | 1,327,000 |
| 2020 | 3,802,000 | 2,391,000 | 1.59 | 1,411,000 |
| 2021 | 3,886,000 | 2,391,000 | 1.63 | 1,495,000 |
| 2022 | 3,950,000 | 2,391,000 | 1.65 | 1,559,000 |
| 2023 | 4,015,000 | 2,391,000 | 1.68 | 1,624,000 |
| 2024 | 4,081,000 | 2,391,000 | 1.71 | 1,690,000 |
| 2025 | 4,149,000 | 2,391,000 | 1.74 | 1,758,000 |
| 2026 | 4,192,000 | 2,391,000 | 1.75 | 1,801,000 |
| 2027 | 4,235,000 | 2,391,000 | 1.77 | 1,844,000 |
| 2028 | 4,278,000 | 2,391,000 | 1.79 | 1,887,000 |
| 2029 | 4,320,000 | 2,391,000 | 1.81 | 1,929,000 |
| 2030 | 4,363,000 | 2,391,000 | 1.82 | 1,972,000 |
| 2031 | 4,379,000 | 2,391,000 | 1.83 | 1,988,000 |
| 2032 | 4,394,000 | 2,391,000 | 1.84 | 2,003,000 |
| 2033 | 4,409,000 | 2,391,000 | 1.84 | 2,018,000 |
| 2034 | 4,422,000 | 2,391,000 | 1.85 | 2,031,000 |
| 2035 | 4,433,000 | 2,391,000 | 1.85 | 2,042,000 |

Table 5A

Estimated Toll Transactions and Net Toll Revenue
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 3

| Year | Estimated Average Daily Toll Transactions | Estimated Annual Toll Revenue (1) | Maintenance and Operating Costs | | | Reserve Maintenance Deposit (3) | Net Toll Revenue |
|------|--|---|------------------------------------|------------------------|-----------|---------------------------------------|---------------------|
| | | | Roadway (2) | Toll Collection (2) | Total | | |
| 2005 | 4,600 | \$2,046,000 | \$23,000 | \$144,000 | \$167,000 | \$33,000 | \$1,846,000 |
| 2006 | 5,100 | 2,251,000 | 24,000 | 151,000 | 175,000 | 35,000 | 2,041,000 |
| 2007 | 5,600 | 2,443,000 | 25,000 | 159,000 | 184,000 | 37,000 | 2,222,000 |
| 2008 | 6,000 | 2,626,000 | 27,000 | 167,000 | 194,000 | 39,000 | 2,393,000 |
| 2009 | 6,400 | 2,797,000 | 28,000 | 175,000 | 203,000 | 41,000 | 2,553,000 |
| 2010 | 6,700 | 2,937,000 | 29,000 | 184,000 | 213,000 | 43,000 | 2,681,000 |
| 2011 | 7,000 | 3,054,000 | 31,000 | 193,000 | 224,000 | 45,000 | 2,785,000 |
| 2012 | 7,300 | 3,177,000 | 33,000 | 203,000 | 236,000 | 47,000 | 2,894,000 |
| 2013 | 7,500 | 3,288,000 | 34,000 | 213,000 | 247,000 | 49,000 | 2,992,000 |
| 2014 | 7,800 | 3,403,000 | 36,000 | 224,000 | 260,000 | 52,000 | 3,091,000 |
| 2015 | 8,100 | 3,522,000 | 38,000 | 235,000 | 273,000 | 55,000 | 3,194,000 |
| 2016 | 8,300 | 3,628,000 | 40,000 | 247,000 | 287,000 | 57,000 | 3,284,000 |
| 2017 | 8,500 | 3,737,000 | 41,000 | 259,000 | 300,000 | 60,000 | 3,377,000 |
| 2018 | 8,700 | 3,850,000 | 44,000 | 272,000 | 316,000 | 63,000 | 3,471,000 |
| 2019 | 9,000 | 3,946,000 | 46,000 | 286,000 | 332,000 | 66,000 | 3,548,000 |
| 2020 | 9,200 | 4,045,000 | 48,000 | 300,000 | 348,000 | 70,000 | 3,627,000 |
| 2021 | 9,400 | 4,146,000 | 50,000 | 315,000 | 365,000 | 73,000 | 3,708,000 |
| 2022 | 9,600 | 4,229,000 | 53,000 | 331,000 | 384,000 | 77,000 | 3,768,000 |
| 2023 | 9,800 | 4,314,000 | 56,000 | 348,000 | 404,000 | 81,000 | 3,829,000 |
| 2024 | 10,000 | 4,400,000 | 58,000 | 365,000 | 423,000 | 85,000 | 3,892,000 |
| 2025 | 10,200 | 4,489,000 | 61,000 | 383,000 | 444,000 | 89,000 | 3,956,000 |
| 2026 | 10,300 | 4,556,000 | 64,000 | 402,000 | 466,000 | 93,000 | 3,997,000 |
| 2027 | 10,500 | 4,624,000 | 68,000 | 422,000 | 490,000 | 98,000 | 4,036,000 |
| 2028 | 10,700 | 4,693,000 | 71,000 | 443,000 | 514,000 | 103,000 | 4,076,000 |
| 2029 | 10,900 | 4,763,000 | 75,000 | 465,000 | 540,000 | 108,000 | 4,115,000 |
| 2030 | 11,100 | 4,834,000 | 78,000 | 488,000 | 566,000 | 113,000 | 4,155,000 |
| 2031 | 11,200 | 4,882,000 | 82,000 | 512,000 | 594,000 | 119,000 | 4,169,000 |
| 2032 | 11,300 | 4,930,000 | 86,000 | 538,000 | 624,000 | 125,000 | 4,181,000 |
| 2033 | 11,400 | 4,980,000 | 91,000 | 565,000 | 656,000 | 131,000 | 4,193,000 |
| 2034 | 11,500 | 5,029,000 | 95,000 | 593,000 | 688,000 | 138,000 | 4,203,000 |
| 2035 | 11,600 | 5,080,000 | 100,000 | 623,000 | 723,000 | 145,000 | 4,212,000 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

(2) Estimated by CH2M Hill.

(3) Reserve maintenance deposit was assumed to be 20 percent of total maintenance and operating costs.

Table 5B

Estimated Annual Debt Service Requirements
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 3

| Item | Corridor 3 |
|---|--------------|
| Estimated Project Capital Cost | |
| Roadway | \$32,217,000 |
| Toll Collection | 625,000 |
| Other Costs (1) | 7,489,000 |
| Total Capital Cost | \$40,331,000 |
| Less Assistance | |
| TEA-21 Grant | \$14,400,000 |
| XNA Contribution | 4,700,000 |
| Total Assistance | \$19,100,000 |
| Total Debt to be Serviced | \$21,231,000 |
| Bond Term | 30 Years |
| Bond Earning Period | 27 Years |
| Assumed Interest Rate | 7.0 Percent |
| Debt Service Factor | 0.0834 |
| Annual Level Debt Service Before Bond Costs | \$1,771,000 |
| Capitalized Interest (2) | 3,541,000 |
| Cost of Bond Issuance (3) | 607,000 |
| Subtotal of Additional Costs Due to Bond Costs | \$5,919,000 |
| Adjusted Debt Service Amount Including Bond Costs | \$27,150,000 |
| Revised Annual Debt Service Amount | \$2,264,000 |

(1) Includes costs for engineering, inspection, administration, legal, etc.

(2) Assumes 36 months at 7 percent on debt.

(3) Assumes 3 percent of issue.

Note: All capital cost estimates provided by CH2M Hill.

Table 5C

Estimated Annual Debt Service Coverage
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 3

| Year | Net Revenue | Level Debt Service | Debt Coverage Ratio | Annual Surplus/ (Shortfall) |
|------|-------------|--------------------|---------------------|-----------------------------|
| 2005 | \$1,846,000 | \$2,264,000 | 0.82 | (\$418,000) |
| 2006 | 2,041,000 | 2,264,000 | 0.90 | (223,000) |
| 2007 | 2,222,000 | 2,264,000 | 0.98 | (42,000) |
| 2008 | 2,393,000 | 2,264,000 | 1.06 | 129,000 |
| 2009 | 2,553,000 | 2,264,000 | 1.13 | 289,000 |
| 2010 | 2,681,000 | 2,264,000 | 1.18 | 417,000 |
| 2011 | 2,785,000 | 2,264,000 | 1.23 | 521,000 |
| 2012 | 2,894,000 | 2,264,000 | 1.28 | 630,000 |
| 2013 | 2,992,000 | 2,264,000 | 1.32 | 728,000 |
| 2014 | 3,091,000 | 2,264,000 | 1.37 | 827,000 |
| 2015 | 3,194,000 | 2,264,000 | 1.41 | 930,000 |
| 2016 | 3,284,000 | 2,264,000 | 1.45 | 1,020,000 |
| 2017 | 3,377,000 | 2,264,000 | 1.49 | 1,113,000 |
| 2018 | 3,471,000 | 2,264,000 | 1.53 | 1,207,000 |
| 2019 | 3,548,000 | 2,264,000 | 1.57 | 1,284,000 |
| 2020 | 3,627,000 | 2,264,000 | 1.60 | 1,363,000 |
| 2021 | 3,708,000 | 2,264,000 | 1.64 | 1,444,000 |
| 2022 | 3,768,000 | 2,264,000 | 1.66 | 1,504,000 |
| 2023 | 3,829,000 | 2,264,000 | 1.69 | 1,565,000 |
| 2024 | 3,892,000 | 2,264,000 | 1.72 | 1,628,000 |
| 2025 | 3,956,000 | 2,264,000 | 1.75 | 1,692,000 |
| 2026 | 3,997,000 | 2,264,000 | 1.77 | 1,733,000 |
| 2027 | 4,036,000 | 2,264,000 | 1.78 | 1,772,000 |
| 2028 | 4,076,000 | 2,264,000 | 1.80 | 1,812,000 |
| 2029 | 4,115,000 | 2,264,000 | 1.82 | 1,851,000 |
| 2030 | 4,155,000 | 2,264,000 | 1.84 | 1,891,000 |
| 2031 | 4,169,000 | 2,264,000 | 1.84 | 1,905,000 |
| 2032 | 4,181,000 | 2,264,000 | 1.85 | 1,917,000 |
| 2033 | 4,193,000 | 2,264,000 | 1.85 | 1,929,000 |
| 2034 | 4,203,000 | 2,264,000 | 1.86 | 1,939,000 |
| 2035 | 4,212,000 | 2,264,000 | 1.86 | 1,948,000 |

CORRIDOR 4

The preliminary feasibility calculations for the Corridor 4 Access Road configuration are discussed in the following sections. Estimates of toll transactions and gross and net toll revenue under the Corridor 4 scenario are presented. Following this, estimates of annual level debt service requirements are presented. Finally, annual debt service coverage ratios for Corridor 4 are calculated.

Estimated Toll Transactions and Net Toll Revenue – Estimated toll transactions and net toll revenue for the Corridor 4 alignment are presented in Table 6A. Estimated average daily toll transactions are estimated to grow from 4,700 in 2005 to 12,000 in 2035. The resultant toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system is estimated to grow from \$2.091 million in 2005 to \$5.188 million in 2035. Net toll revenue is estimated to grow from \$1.892 million in 2005 to \$4.326 million in 2035.

Estimated Annual Debt Service Requirements – Table 6B provides information regarding the calculation of the annual level debt service requirements for the Corridor 4 alignment. The total estimated capital cost is \$40.248 million. After TEA-21 and XNA assistance are subtracted out and bond costs added, the total debt to be serviced is \$27.044 million. The estimated annual level debt service is \$2.255 million.

Estimated Annual Debt Service Coverage – The estimated annual debt service coverage for the Corridor 4 alignment is presented in Table 6C. The debt coverage ratio is 0.84 in 2005, reaches 1.01 in 2007 and grows to 1.92 in 2035. Debt service expected to exceed net revenue in the first two years of operation.

CORRIDOR 5

The preliminary feasibility calculations for the Corridor 5 Access Road configuration are discussed in the following sections. Estimates of toll transactions and gross and net toll revenue under the Corridor 5 scenario are presented. Following this, estimates of annual level debt service requirements are presented. Finally, annual debt service coverage ratios for Corridor 5 are calculated.

Estimated Toll Transactions and Net Toll Revenue – Estimated toll transactions and net toll revenue for the Corridor 5 alignment are presented in Table 7A. Estimated average daily toll transactions are estimated to grow from 4,800 in 2005 to 12,200 in 2035. The resultant toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system is estimated to grow from \$2.135 million in 2005 to \$5.299 million in 2035. Net toll revenue is estimated to grow from \$1.935 million in 2005 to \$4.435 million in 2035.

Estimated Annual Debt Service Requirements – Table 7B provides information regarding the calculation of the annual level debt service requirements for the Corridor 5 alignment. The total estimated capital cost is \$34.942 million. After TEA-21 and XNA assistance are subtracted out and bond costs added, the total debt to be serviced is \$20.257 million. The estimated annual level debt service is \$1.689 million.

Table 6A

Estimated Toll Transactions and Net Toll Revenue
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 4

| Year | Estimated Average Daily Toll Transactions | Estimated Annual Toll Revenue (1) | Maintenance and Operating Costs | | | Reserve Maintenance Deposit (3) | Net Toll Revenue |
|------|--|---|------------------------------------|------------------------|-----------|---------------------------------------|---------------------|
| | | | Roadway (2) | Toll Collection (2) | Total | | |
| 2005 | 4,700 | \$2,091,000 | \$22,000 | \$144,000 | \$166,000 | \$33,000 | \$1,892,000 |
| 2006 | 5,200 | 2,300,000 | 23,000 | 151,000 | 174,000 | 35,000 | 2,091,000 |
| 2007 | 5,700 | 2,496,000 | 24,000 | 159,000 | 183,000 | 37,000 | 2,276,000 |
| 2008 | 6,100 | 2,683,000 | 25,000 | 167,000 | 192,000 | 38,000 | 2,453,000 |
| 2009 | 6,500 | 2,858,000 | 27,000 | 175,000 | 202,000 | 40,000 | 2,616,000 |
| 2010 | 6,800 | 3,001,000 | 28,000 | 184,000 | 212,000 | 42,000 | 2,747,000 |
| 2011 | 7,100 | 3,121,000 | 29,000 | 193,000 | 222,000 | 44,000 | 2,855,000 |
| 2012 | 7,400 | 3,246,000 | 31,000 | 203,000 | 234,000 | 47,000 | 2,965,000 |
| 2013 | 7,700 | 3,359,000 | 32,000 | 213,000 | 245,000 | 49,000 | 3,065,000 |
| 2014 | 8,000 | 3,476,000 | 34,000 | 224,000 | 258,000 | 52,000 | 3,166,000 |
| 2015 | 8,300 | 3,597,000 | 36,000 | 235,000 | 271,000 | 54,000 | 3,272,000 |
| 2016 | 8,500 | 3,705,000 | 37,000 | 247,000 | 284,000 | 57,000 | 3,364,000 |
| 2017 | 8,700 | 3,816,000 | 39,000 | 259,000 | 298,000 | 60,000 | 3,458,000 |
| 2018 | 9,000 | 3,931,000 | 41,000 | 272,000 | 313,000 | 63,000 | 3,555,000 |
| 2019 | 9,300 | 4,029,000 | 43,000 | 286,000 | 329,000 | 66,000 | 3,634,000 |
| 2020 | 9,500 | 4,130,000 | 46,000 | 300,000 | 346,000 | 69,000 | 3,715,000 |
| 2021 | 9,700 | 4,233,000 | 48,000 | 315,000 | 363,000 | 73,000 | 3,797,000 |
| 2022 | 9,900 | 4,317,000 | 50,000 | 331,000 | 381,000 | 76,000 | 3,860,000 |
| 2023 | 10,100 | 4,404,000 | 53,000 | 348,000 | 401,000 | 80,000 | 3,923,000 |
| 2024 | 10,300 | 4,492,000 | 55,000 | 365,000 | 420,000 | 84,000 | 3,988,000 |
| 2025 | 10,500 | 4,582,000 | 58,000 | 383,000 | 441,000 | 88,000 | 4,053,000 |
| 2026 | 10,700 | 4,651,000 | 61,000 | 402,000 | 463,000 | 93,000 | 4,095,000 |
| 2027 | 10,900 | 4,721,000 | 64,000 | 422,000 | 486,000 | 97,000 | 4,138,000 |
| 2028 | 11,100 | 4,792,000 | 67,000 | 443,000 | 510,000 | 102,000 | 4,180,000 |
| 2029 | 11,300 | 4,864,000 | 71,000 | 465,000 | 536,000 | 107,000 | 4,221,000 |
| 2030 | 11,500 | 4,937,000 | 74,000 | 488,000 | 562,000 | 112,000 | 4,263,000 |
| 2031 | 11,600 | 4,986,000 | 78,000 | 512,000 | 590,000 | 118,000 | 4,278,000 |
| 2032 | 11,700 | 5,035,000 | 82,000 | 538,000 | 620,000 | 124,000 | 4,291,000 |
| 2033 | 11,800 | 5,086,000 | 86,000 | 565,000 | 651,000 | 130,000 | 4,305,000 |
| 2034 | 11,900 | 5,136,000 | 90,000 | 593,000 | 683,000 | 137,000 | 4,316,000 |
| 2035 | 12,000 | 5,188,000 | 95,000 | 623,000 | 718,000 | 144,000 | 4,326,000 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

(2) Estimated by CH2M Hill.

(3) Reserve maintenance deposit was assumed to be 20 percent of total maintenance and operating costs.

Table 6B

Estimated Annual Debt Service Requirements
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 4

| Item | Corridor 4 |
|---|--------------|
| Estimated Project Capital Cost | |
| Roadway | \$32,134,000 |
| Toll Collection | 625,000 |
| Other Costs (1) | 7,489,000 |
| Total Capital Cost | \$40,248,000 |
| Less Assistance | |
| TEA-21 Grant | \$14,400,000 |
| XNA Contribution | 4,700,000 |
| Total Assistance | \$19,100,000 |
| Total Debt to be Serviced | \$21,148,000 |
| Bond Term | 30 Years |
| Bond Earning Period | 27 Years |
| Assumed Interest Rate | 7.0 Percent |
| Debt Service Factor | 0.0834 |
| Annual Level Debt Service Before Bond Costs | \$1,764,000 |
| Capitalized Interest (2) | 3,527,000 |
| Cost of Bond Issuance (3) | 605,000 |
| Subtotal of Additional Costs Due to Bond Costs | \$5,896,000 |
| Adjusted Debt Service Amount Including Bond Costs | \$27,044,000 |
| Revised Annual Debt Service Amount | \$2,255,000 |

(1) Includes costs for engineering, inspection, administration, legal, etc.

(2) Assumes 36 months at 7 percent on debt.

(3) Assumes 3 percent of issue.

Note: All capital cost estimates provided by CH2M Hill.

Table 6C

Estimated Annual Debt Service Coverage
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 4

| Year | Net Revenue | Level Debt Service | Debt Coverage Ratio | Annual Surplus/ (Shortfall) |
|------|----------------|--------------------------|---------------------------|-----------------------------------|
| 2005 | \$1,892,000 | \$2,255,000 | 0.84 | (\$363,000) |
| 2006 | 2,091,000 | 2,255,000 | 0.93 | (164,000) |
| 2007 | 2,276,000 | 2,255,000 | 1.01 | 21,000 |
| 2008 | 2,453,000 | 2,255,000 | 1.09 | 198,000 |
| 2009 | 2,616,000 | 2,255,000 | 1.16 | 361,000 |
| 2010 | 2,747,000 | 2,255,000 | 1.22 | 492,000 |
| 2011 | 2,855,000 | 2,255,000 | 1.27 | 600,000 |
| 2012 | 2,965,000 | 2,255,000 | 1.31 | 710,000 |
| 2013 | 3,065,000 | 2,255,000 | 1.36 | 810,000 |
| 2014 | 3,166,000 | 2,255,000 | 1.40 | 911,000 |
| 2015 | 3,272,000 | 2,255,000 | 1.45 | 1,017,000 |
| 2016 | 3,364,000 | 2,255,000 | 1.49 | 1,109,000 |
| 2017 | 3,458,000 | 2,255,000 | 1.53 | 1,203,000 |
| 2018 | 3,555,000 | 2,255,000 | 1.58 | 1,300,000 |
| 2019 | 3,634,000 | 2,255,000 | 1.61 | 1,379,000 |
| 2020 | 3,715,000 | 2,255,000 | 1.65 | 1,460,000 |
| 2021 | 3,797,000 | 2,255,000 | 1.68 | 1,542,000 |
| 2022 | 3,860,000 | 2,255,000 | 1.71 | 1,605,000 |
| 2023 | 3,923,000 | 2,255,000 | 1.74 | 1,668,000 |
| 2024 | 3,988,000 | 2,255,000 | 1.77 | 1,733,000 |
| 2025 | 4,053,000 | 2,255,000 | 1.80 | 1,798,000 |
| 2026 | 4,095,000 | 2,255,000 | 1.82 | 1,840,000 |
| 2027 | 4,138,000 | 2,255,000 | 1.84 | 1,883,000 |
| 2028 | 4,180,000 | 2,255,000 | 1.85 | 1,925,000 |
| 2029 | 4,221,000 | 2,255,000 | 1.87 | 1,966,000 |
| 2030 | 4,263,000 | 2,255,000 | 1.89 | 2,008,000 |
| 2031 | 4,278,000 | 2,255,000 | 1.90 | 2,023,000 |
| 2032 | 4,291,000 | 2,255,000 | 1.90 | 2,036,000 |
| 2033 | 4,305,000 | 2,255,000 | 1.91 | 2,050,000 |
| 2034 | 4,316,000 | 2,255,000 | 1.91 | 2,061,000 |
| 2035 | 4,326,000 | 2,255,000 | 1.92 | 2,071,000 |

Table 7A

Estimated Toll Transactions and Net Toll Revenue
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 5

| Year | Estimated Average Daily Toll Transactions | Estimated Annual Toll Revenue (1) | Maintenance and Operating Costs | | | Reserve Maintenance Deposit (3) | Net Toll Revenue |
|------|--|---|------------------------------------|------------------------|-----------|---------------------------------------|---------------------|
| | | | Roadway (2) | Toll Collection (2) | Total | | |
| 2005 | 4,800 | \$2,135,000 | \$23,000 | \$144,000 | \$167,000 | \$33,000 | \$1,935,000 |
| 2006 | 5,300 | 2,349,000 | 24,000 | 151,000 | 175,000 | 35,000 | 2,139,000 |
| 2007 | 5,800 | 2,549,000 | 25,000 | 159,000 | 184,000 | 37,000 | 2,328,000 |
| 2008 | 6,200 | 2,740,000 | 26,000 | 167,000 | 193,000 | 39,000 | 2,508,000 |
| 2009 | 6,600 | 2,918,000 | 27,000 | 175,000 | 202,000 | 40,000 | 2,676,000 |
| 2010 | 6,900 | 3,064,000 | 29,000 | 184,000 | 213,000 | 43,000 | 2,808,000 |
| 2011 | 7,200 | 3,186,000 | 30,000 | 193,000 | 223,000 | 45,000 | 2,918,000 |
| 2012 | 7,500 | 3,314,000 | 32,000 | 203,000 | 235,000 | 47,000 | 3,032,000 |
| 2013 | 7,800 | 3,430,000 | 33,000 | 213,000 | 246,000 | 49,000 | 3,135,000 |
| 2014 | 8,100 | 3,550,000 | 35,000 | 224,000 | 259,000 | 52,000 | 3,239,000 |
| 2015 | 8,400 | 3,674,000 | 37,000 | 235,000 | 272,000 | 54,000 | 3,348,000 |
| 2016 | 8,600 | 3,784,000 | 38,000 | 247,000 | 285,000 | 57,000 | 3,442,000 |
| 2017 | 8,900 | 3,897,000 | 40,000 | 259,000 | 299,000 | 60,000 | 3,538,000 |
| 2018 | 9,200 | 4,015,000 | 42,000 | 272,000 | 314,000 | 63,000 | 3,638,000 |
| 2019 | 9,500 | 4,115,000 | 45,000 | 286,000 | 331,000 | 66,000 | 3,718,000 |
| 2020 | 9,700 | 4,218,000 | 47,000 | 300,000 | 347,000 | 69,000 | 3,802,000 |
| 2021 | 9,900 | 4,324,000 | 49,000 | 315,000 | 364,000 | 73,000 | 3,887,000 |
| 2022 | 10,100 | 4,410,000 | 52,000 | 331,000 | 383,000 | 77,000 | 3,950,000 |
| 2023 | 10,300 | 4,499,000 | 54,000 | 348,000 | 402,000 | 80,000 | 4,017,000 |
| 2024 | 10,500 | 4,589,000 | 57,000 | 365,000 | 422,000 | 84,000 | 4,083,000 |
| 2025 | 10,700 | 4,681,000 | 60,000 | 383,000 | 443,000 | 89,000 | 4,149,000 |
| 2026 | 10,900 | 4,751,000 | 63,000 | 402,000 | 465,000 | 93,000 | 4,193,000 |
| 2027 | 11,100 | 4,822,000 | 66,000 | 422,000 | 488,000 | 98,000 | 4,236,000 |
| 2028 | 11,300 | 4,894,000 | 69,000 | 443,000 | 512,000 | 102,000 | 4,280,000 |
| 2029 | 11,500 | 4,967,000 | 73,000 | 465,000 | 538,000 | 108,000 | 4,321,000 |
| 2030 | 11,700 | 5,041,000 | 76,000 | 488,000 | 564,000 | 113,000 | 4,364,000 |
| 2031 | 11,800 | 5,091,000 | 80,000 | 512,000 | 592,000 | 118,000 | 4,381,000 |
| 2032 | 11,900 | 5,142,000 | 84,000 | 538,000 | 622,000 | 124,000 | 4,396,000 |
| 2033 | 12,000 | 5,194,000 | 88,000 | 565,000 | 653,000 | 131,000 | 4,410,000 |
| 2034 | 12,100 | 5,246,000 | 93,000 | 593,000 | 686,000 | 137,000 | 4,423,000 |
| 2035 | 12,200 | 5,299,000 | 97,000 | 623,000 | 720,000 | 144,000 | 4,435,000 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

(2) Estimated by CH2M Hill.

(3) Reserve maintenance deposit was assumed to be 20 percent of total maintenance and operating costs.

Table 7B

Estimated Annual Debt Service Requirements
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 5

| Item | Corridor 5 |
|---|--------------|
| Estimated Project Capital Cost | |
| Roadway | \$26,828,000 |
| Toll Collection | 625,000 |
| Other Costs (1) | 7,489,000 |
| Total Capital Cost | \$34,942,000 |
| Less Assistance | |
| TEA-21 Grant | \$14,400,000 |
| XNA Contribution | 4,700,000 |
| Total Assistance | \$19,100,000 |
| Total Debt to be Serviced | \$15,842,000 |
| Bond Term | 30 Years |
| Bond Earning Period | 27 Years |
| Assumed Interest Rate | 7.0 Percent |
| Debt Service Factor | 0.0834 |
| Annual Level Debt Service Before Bond Costs | \$1,321,000 |
| Capitalized Interest (2) | 2,641,000 |
| Cost of Bond Issuance (3) | 453,000 |
| Subtotal of Additional Costs Due to Bond Costs | \$4,415,000 |
| Adjusted Debt Service Amount Including Bond Costs | \$20,257,000 |
| Revised Annual Debt Service Amount | \$1,689,000 |

(1) Includes costs for engineering, inspection, administration, legal, etc.

(2) Assumes 36 months at 7 percent on debt.

(3) Assumes 3 percent of issue.

Note: All capital cost estimates provided by CH2M Hill.

Estimated Annual Debt Service Coverage – The estimated annual debt service coverage for the Corridor 5 alignment is presented in Table 7C. The debt coverage ratio is 1.15 in 2005 and grows to 2.63 in 2035. The Corridor 5 alignment is the only alignment which at no point during the forecast period is debt service expected to exceed net revenue.

CORRIDOR 6

The preliminary feasibility calculations for the Corridor 6 Access Road configuration are discussed in the following sections. Estimates of toll transactions and gross and net toll revenue under the Corridor 6 scenario are presented. Following this, estimates of annual level debt service requirements are presented. Finally, annual debt service coverage ratios for Corridor 6 are calculated.

Estimated Toll Transactions and Net Toll Revenue – Estimated toll transactions and net toll revenue for the Corridor 6 alignment are presented in Table 8A. Estimated average daily toll transactions are estimated to grow from 3,700 in 2005 to 9,200 in 2035. The resultant toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system is estimated to grow from \$1.649 million in 2005 to \$4.094 million in 2035. Net toll revenue is estimated to grow from \$1.453 million in 2005 to \$3.248 million in 2035.

Estimated Annual Debt Service Requirements – Table 8B provides information regarding the calculation of the annual level debt service requirements for the Corridor 6 alignment. The total estimated capital cost is \$34.451 million. After TEA-21 and XNA assistance are subtracted out and bond costs added, the total debt to be serviced is \$19.629 million. The estimated annual level debt service is \$1.637 million.

Estimated Annual Debt Service Coverage – The estimated annual debt service coverage for the Corridor 6 alignment is presented in Table 8C. The debt coverage ratio is 0.89 in 2005, reaches 1.07 in 2007 and grows to 1.98 in 2035. Debt service expected to exceed net revenue in the first two years of operation.

SUMMARY OF NET REVENUE AND DEBT COVERAGE RATIOS

A summary of net revenue and debt coverage ratios is presented in Table 9. Corridor 5 has debt coverage ratios above 1.00 for every year throughout the forecast period. At no point within the forecast period is estimated debt service expected to exceed net revenue. Corridor 5 has the highest debt coverage ratios of any of the corridor alignments.

The remaining corridor alignments all have a revenue shortfalls within in the first few years of the projection period. The first-year debt coverage ratios for these corridors range from 0.81 to 0.95.

CONCLUSION

With the TEA-21 and XNA assistance, it appears as though there are corridor alignments being considered for the Access Road that are feasible. Without this assistance, however, none of the

Table 7C

Estimated Annual Debt Service Coverage
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 5

| Year | Net Revenue | Level Debt Service | Debt Coverage Ratio | Annual Surplus/ (Shortfall) |
|------|----------------|--------------------------|---------------------------|-----------------------------------|
| 2005 | \$1,935,000 | \$1,689,000 | 1.15 | \$246,000 |
| 2006 | 2,139,000 | 1,689,000 | 1.27 | 450,000 |
| 2007 | 2,328,000 | 1,689,000 | 1.38 | 639,000 |
| 2008 | 2,508,000 | 1,689,000 | 1.48 | 819,000 |
| 2009 | 2,676,000 | 1,689,000 | 1.58 | 987,000 |
| 2010 | 2,808,000 | 1,689,000 | 1.66 | 1,119,000 |
| 2011 | 2,918,000 | 1,689,000 | 1.73 | 1,229,000 |
| 2012 | 3,032,000 | 1,689,000 | 1.80 | 1,343,000 |
| 2013 | 3,135,000 | 1,689,000 | 1.86 | 1,446,000 |
| 2014 | 3,239,000 | 1,689,000 | 1.92 | 1,550,000 |
| 2015 | 3,348,000 | 1,689,000 | 1.98 | 1,659,000 |
| 2016 | 3,442,000 | 1,689,000 | 2.04 | 1,753,000 |
| 2017 | 3,538,000 | 1,689,000 | 2.09 | 1,849,000 |
| 2018 | 3,638,000 | 1,689,000 | 2.15 | 1,949,000 |
| 2019 | 3,718,000 | 1,689,000 | 2.20 | 2,029,000 |
| 2020 | 3,802,000 | 1,689,000 | 2.25 | 2,113,000 |
| 2021 | 3,887,000 | 1,689,000 | 2.30 | 2,198,000 |
| 2022 | 3,950,000 | 1,689,000 | 2.34 | 2,261,000 |
| 2023 | 4,017,000 | 1,689,000 | 2.38 | 2,328,000 |
| 2024 | 4,083,000 | 1,689,000 | 2.42 | 2,394,000 |
| 2025 | 4,149,000 | 1,689,000 | 2.46 | 2,460,000 |
| 2026 | 4,193,000 | 1,689,000 | 2.48 | 2,504,000 |
| 2027 | 4,236,000 | 1,689,000 | 2.51 | 2,547,000 |
| 2028 | 4,280,000 | 1,689,000 | 2.53 | 2,591,000 |
| 2029 | 4,321,000 | 1,689,000 | 2.56 | 2,632,000 |
| 2030 | 4,364,000 | 1,689,000 | 2.58 | 2,675,000 |
| 2031 | 4,381,000 | 1,689,000 | 2.59 | 2,692,000 |
| 2032 | 4,396,000 | 1,689,000 | 2.60 | 2,707,000 |
| 2033 | 4,410,000 | 1,689,000 | 2.61 | 2,721,000 |
| 2034 | 4,423,000 | 1,689,000 | 2.62 | 2,734,000 |
| 2035 | 4,435,000 | 1,689,000 | 2.63 | 2,746,000 |

Table 8A

Estimated Toll Transactions and Net Toll Revenue
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 6

| Year | Estimated Average Daily Toll Transactions | Estimated Annual Toll Revenue (1) | Maintenance and Operating Costs | | | Reserve Maintenance Deposit (3) | Net Toll Revenue |
|------|--|---|------------------------------------|------------------------|-----------|---------------------------------------|---------------------|
| | | | Roadway (2) | Toll Collection (2) | Total | | |
| 2005 | 3,700 | \$1,649,000 | \$19,000 | \$144,000 | \$163,000 | \$33,000 | \$1,453,000 |
| 2006 | 4,100 | 1,814,000 | 20,000 | 151,000 | 171,000 | 34,000 | 1,609,000 |
| 2007 | 4,500 | 1,969,000 | 21,000 | 159,000 | 180,000 | 36,000 | 1,753,000 |
| 2008 | 4,800 | 2,116,000 | 22,000 | 167,000 | 189,000 | 38,000 | 1,889,000 |
| 2009 | 5,100 | 2,254,000 | 23,000 | 175,000 | 198,000 | 40,000 | 2,016,000 |
| 2010 | 5,300 | 2,367,000 | 24,000 | 184,000 | 208,000 | 42,000 | 2,117,000 |
| 2011 | 5,500 | 2,461,000 | 25,000 | 193,000 | 218,000 | 44,000 | 2,199,000 |
| 2012 | 5,700 | 2,560,000 | 27,000 | 203,000 | 230,000 | 46,000 | 2,284,000 |
| 2013 | 5,900 | 2,649,000 | 28,000 | 213,000 | 241,000 | 48,000 | 2,360,000 |
| 2014 | 6,100 | 2,741,000 | 29,000 | 224,000 | 253,000 | 51,000 | 2,437,000 |
| 2015 | 6,300 | 2,837,000 | 31,000 | 235,000 | 266,000 | 53,000 | 2,518,000 |
| 2016 | 6,500 | 2,922,000 | 32,000 | 247,000 | 279,000 | 56,000 | 2,587,000 |
| 2017 | 6,700 | 3,010,000 | 34,000 | 259,000 | 293,000 | 59,000 | 2,658,000 |
| 2018 | 6,900 | 3,101,000 | 36,000 | 272,000 | 308,000 | 62,000 | 2,731,000 |
| 2019 | 7,200 | 3,178,000 | 37,000 | 286,000 | 323,000 | 65,000 | 2,790,000 |
| 2020 | 7,400 | 3,258,000 | 39,000 | 300,000 | 339,000 | 68,000 | 2,851,000 |
| 2021 | 7,600 | 3,340,000 | 41,000 | 315,000 | 356,000 | 71,000 | 2,913,000 |
| 2022 | 7,700 | 3,406,000 | 43,000 | 331,000 | 374,000 | 75,000 | 2,957,000 |
| 2023 | 7,800 | 3,475,000 | 45,000 | 348,000 | 393,000 | 79,000 | 3,003,000 |
| 2024 | 8,000 | 3,544,000 | 48,000 | 365,000 | 413,000 | 83,000 | 3,048,000 |
| 2025 | 8,200 | 3,615,000 | 50,000 | 383,000 | 433,000 | 87,000 | 3,095,000 |
| 2026 | 8,300 | 3,669,000 | 53,000 | 402,000 | 455,000 | 91,000 | 3,123,000 |
| 2027 | 8,400 | 3,724,000 | 55,000 | 422,000 | 477,000 | 95,000 | 3,152,000 |
| 2028 | 8,500 | 3,780,000 | 58,000 | 443,000 | 501,000 | 100,000 | 3,179,000 |
| 2029 | 8,600 | 3,837,000 | 61,000 | 465,000 | 526,000 | 105,000 | 3,206,000 |
| 2030 | 8,700 | 3,895,000 | 64,000 | 488,000 | 552,000 | 110,000 | 3,233,000 |
| 2031 | 8,800 | 3,934,000 | 67,000 | 512,000 | 579,000 | 116,000 | 3,239,000 |
| 2032 | 8,900 | 3,973,000 | 71,000 | 538,000 | 609,000 | 122,000 | 3,242,000 |
| 2033 | 9,000 | 4,013,000 | 74,000 | 565,000 | 639,000 | 128,000 | 3,246,000 |
| 2034 | 9,100 | 4,053,000 | 78,000 | 593,000 | 671,000 | 134,000 | 3,248,000 |
| 2035 | 9,200 | 4,094,000 | 82,000 | 623,000 | 705,000 | 141,000 | 3,248,000 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

(2) Estimated by CH2M Hill.

(3) Reserve maintenance deposit was assumed to be 20 percent of total maintenance and operating costs.

Table 8B

Estimated Annual Debt Service Requirements
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 6

| Item | Corridor 6 |
|---|------------------|
| Estimated Project Capital Cost | |
| Roadway | \$26,337,000 |
| Toll Collection | 625,000 |
| | <u>7,489,000</u> |
| Total Capital Cost | \$34,451,000 |
| Less Assistance | |
| TEA-21 Grant | \$14,400,000 |
| XNA Contribution | <u>4,700,000</u> |
| Total Assistance | \$19,100,000 |
| Total Debt to be Serviced | \$15,351,000 |
| Bond Term | 30 Years |
| Bond Earning Period | 27 Years |
| Assumed Interest Rate | 7.0 Percent |
| Debt Service Factor | 0.0834 |
| Annual Level Debt Service Before Bond Costs | \$1,280,000 |
| Capitalized Interest (2) | 2,559,000 |
| Cost of Bond Issuance (3) | <u>439,000</u> |
| Subtotal of Additional Costs Due to Bond Costs | \$4,278,000 |
| Adjusted Debt Service Amount Including Bond Costs | \$19,629,000 |
| Revised Annual Debt Service Amount | \$1,637,000 |

(1) Includes costs for engineering, inspection, administration, legal, etc.

(2) Assumes 36 months at 7 percent on debt.

(3) Assumes 3 percent of issue.

Note: All capital cost estimates provided by CH2M Hill.

Table 8C

Estimated Annual Debt Service Coverage
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridor 6

| Year | Net Revenue | Level Debt Service | Debt Coverage Ratio | Annual Surplus/ (Shortfall) |
|------|----------------|--------------------------|---------------------------|-----------------------------------|
| 2005 | \$1,453,000 | \$1,637,000 | 0.89 | (\$184,000) |
| 2006 | 1,609,000 | 1,637,000 | 0.98 | (28,000) |
| 2007 | 1,753,000 | 1,637,000 | 1.07 | 116,000 |
| 2008 | 1,889,000 | 1,637,000 | 1.15 | 252,000 |
| 2009 | 2,016,000 | 1,637,000 | 1.23 | 379,000 |
| 2010 | 2,117,000 | 1,637,000 | 1.29 | 480,000 |
| 2011 | 2,199,000 | 1,637,000 | 1.34 | 562,000 |
| 2012 | 2,284,000 | 1,637,000 | 1.40 | 647,000 |
| 2013 | 2,360,000 | 1,637,000 | 1.44 | 723,000 |
| 2014 | 2,437,000 | 1,637,000 | 1.49 | 800,000 |
| 2015 | 2,518,000 | 1,637,000 | 1.54 | 881,000 |
| 2016 | 2,587,000 | 1,637,000 | 1.58 | 950,000 |
| 2017 | 2,658,000 | 1,637,000 | 1.62 | 1,021,000 |
| 2018 | 2,731,000 | 1,637,000 | 1.67 | 1,094,000 |
| 2019 | 2,790,000 | 1,637,000 | 1.70 | 1,153,000 |
| 2020 | 2,851,000 | 1,637,000 | 1.74 | 1,214,000 |
| 2021 | 2,913,000 | 1,637,000 | 1.78 | 1,276,000 |
| 2022 | 2,957,000 | 1,637,000 | 1.81 | 1,320,000 |
| 2023 | 3,003,000 | 1,637,000 | 1.83 | 1,366,000 |
| 2024 | 3,048,000 | 1,637,000 | 1.86 | 1,411,000 |
| 2025 | 3,095,000 | 1,637,000 | 1.89 | 1,458,000 |
| 2026 | 3,123,000 | 1,637,000 | 1.91 | 1,486,000 |
| 2027 | 3,152,000 | 1,637,000 | 1.93 | 1,515,000 |
| 2028 | 3,179,000 | 1,637,000 | 1.94 | 1,542,000 |
| 2029 | 3,206,000 | 1,637,000 | 1.96 | 1,569,000 |
| 2030 | 3,233,000 | 1,637,000 | 1.97 | 1,596,000 |
| 2031 | 3,239,000 | 1,637,000 | 1.98 | 1,602,000 |
| 2032 | 3,242,000 | 1,637,000 | 1.98 | 1,605,000 |
| 2033 | 3,246,000 | 1,637,000 | 1.98 | 1,609,000 |
| 2034 | 3,248,000 | 1,637,000 | 1.98 | 1,611,000 |
| 2035 | 3,248,000 | 1,637,000 | 1.98 | 1,611,000 |

Table 9

Summary of Net Revenue and Debt Coverage Ratios
Proposed Northwest Arkansas Regional Airport Intermodal Access Road
Corridors 1 Through 6

| Year | Corridor 1 | | Corridor 2 | | Corridor 3 | | Corridor 4 | | Corridor 5 | | Corridor 6 | |
|------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| | Net Toll Revenue (1) | Debt Coverage Ratio | Net Toll Revenue (1) | Debt Coverage Ratio | Net Toll Revenue (1) | Debt Coverage Ratio | Net Toll Revenue (1) | Debt Coverage Ratio | Net Toll Revenue (1) | Debt Coverage Ratio | Net Toll Revenue (1) | Debt Coverage Ratio |
| 2005 | \$1,978,000 | 0.95 | \$1,935,000 | 0.81 | \$1,846,000 | 0.82 | \$1,892,000 | 0.84 | \$1,935,000 | 1.15 | \$1,453,000 | 0.89 |
| 2006 | 2,186,000 | 1.06 | 2,139,000 | 0.89 | 2,041,000 | 0.90 | 2,091,000 | 0.93 | 2,139,000 | 1.27 | 1,609,000 | 0.98 |
| 2007 | 2,379,000 | 1.15 | 2,328,000 | 0.97 | 2,222,000 | 0.98 | 2,276,000 | 1.01 | 2,328,000 | 1.38 | 1,753,000 | 1.07 |
| 2008 | 2,563,000 | 1.24 | 2,508,000 | 1.05 | 2,393,000 | 1.06 | 2,453,000 | 1.09 | 2,508,000 | 1.48 | 1,889,000 | 1.15 |
| 2009 | 2,733,000 | 1.32 | 2,674,000 | 1.12 | 2,553,000 | 1.13 | 2,616,000 | 1.16 | 2,676,000 | 1.58 | 2,016,000 | 1.23 |
| 2010 | 2,870,000 | 1.39 | 2,808,000 | 1.17 | 2,681,000 | 1.18 | 2,747,000 | 1.22 | 2,808,000 | 1.66 | 2,117,000 | 1.29 |
| 2011 | 2,982,000 | 1.44 | 2,917,000 | 1.22 | 2,785,000 | 1.23 | 2,855,000 | 1.27 | 2,918,000 | 1.73 | 2,199,000 | 1.34 |
| 2012 | 3,100,000 | 1.50 | 3,032,000 | 1.27 | 2,894,000 | 1.28 | 2,965,000 | 1.31 | 3,032,000 | 1.80 | 2,284,000 | 1.40 |
| 2013 | 3,203,000 | 1.55 | 3,134,000 | 1.31 | 2,992,000 | 1.32 | 3,065,000 | 1.36 | 3,135,000 | 1.86 | 2,360,000 | 1.44 |
| 2014 | 3,310,000 | 1.60 | 3,239,000 | 1.35 | 3,091,000 | 1.37 | 3,166,000 | 1.40 | 3,239,000 | 1.92 | 2,437,000 | 1.49 |
| 2015 | 3,420,000 | 1.65 | 3,348,000 | 1.40 | 3,194,000 | 1.41 | 3,272,000 | 1.45 | 3,348,000 | 1.98 | 2,518,000 | 1.54 |
| 2016 | 3,516,000 | 1.70 | 3,441,000 | 1.44 | 3,284,000 | 1.45 | 3,364,000 | 1.49 | 3,442,000 | 2.04 | 2,587,000 | 1.58 |
| 2017 | 3,615,000 | 1.74 | 3,537,000 | 1.48 | 3,377,000 | 1.49 | 3,458,000 | 1.53 | 3,538,000 | 2.09 | 2,658,000 | 1.62 |
| 2018 | 3,717,000 | 1.79 | 3,637,000 | 1.52 | 3,471,000 | 1.53 | 3,555,000 | 1.58 | 3,638,000 | 2.15 | 2,731,000 | 1.67 |
| 2019 | 3,800,000 | 1.83 | 3,718,000 | 1.55 | 3,548,000 | 1.57 | 3,634,000 | 1.61 | 3,718,000 | 2.20 | 2,790,000 | 1.70 |
| 2020 | 3,885,000 | 1.88 | 3,802,000 | 1.59 | 3,627,000 | 1.60 | 3,715,000 | 1.65 | 3,802,000 | 2.25 | 2,851,000 | 1.74 |
| 2021 | 3,972,000 | 1.92 | 3,886,000 | 1.63 | 3,708,000 | 1.64 | 3,797,000 | 1.68 | 3,887,000 | 2.30 | 2,913,000 | 1.78 |
| 2022 | 4,038,000 | 1.95 | 3,950,000 | 1.65 | 3,768,000 | 1.66 | 3,860,000 | 1.71 | 3,950,000 | 2.34 | 2,957,000 | 1.81 |
| 2023 | 4,106,000 | 1.98 | 4,015,000 | 1.68 | 3,829,000 | 1.69 | 3,923,000 | 1.74 | 4,017,000 | 2.38 | 3,003,000 | 1.83 |
| 2024 | 4,173,000 | 2.01 | 4,081,000 | 1.71 | 3,892,000 | 1.72 | 3,988,000 | 1.77 | 4,083,000 | 2.42 | 3,048,000 | 1.86 |
| 2025 | 4,242,000 | 2.05 | 4,149,000 | 1.74 | 3,956,000 | 1.75 | 4,053,000 | 1.80 | 4,149,000 | 2.46 | 3,095,000 | 1.89 |
| 2026 | 4,286,000 | 2.07 | 4,192,000 | 1.75 | 3,997,000 | 1.77 | 4,095,000 | 1.82 | 4,193,000 | 2.48 | 3,123,000 | 1.91 |
| 2027 | 4,331,000 | 2.09 | 4,235,000 | 1.77 | 4,036,000 | 1.78 | 4,138,000 | 1.84 | 4,236,000 | 2.51 | 3,152,000 | 1.93 |
| 2028 | 4,375,000 | 2.11 | 4,278,000 | 1.79 | 4,076,000 | 1.80 | 4,180,000 | 1.85 | 4,280,000 | 2.53 | 3,179,000 | 1.94 |
| 2029 | 4,420,000 | 2.13 | 4,320,000 | 1.81 | 4,115,000 | 1.82 | 4,221,000 | 1.87 | 4,321,000 | 2.56 | 3,206,000 | 1.96 |
| 2030 | 4,464,000 | 2.15 | 4,363,000 | 1.82 | 4,155,000 | 1.84 | 4,263,000 | 1.89 | 4,364,000 | 2.58 | 3,233,000 | 1.97 |
| 2031 | 4,481,000 | 2.16 | 4,379,000 | 1.83 | 4,169,000 | 1.84 | 4,278,000 | 1.90 | 4,381,000 | 2.59 | 3,239,000 | 1.98 |
| 2032 | 4,496,000 | 2.17 | 4,394,000 | 1.84 | 4,181,000 | 1.85 | 4,291,000 | 1.90 | 4,396,000 | 2.60 | 3,242,000 | 1.98 |
| 2033 | 4,512,000 | 2.18 | 4,409,000 | 1.84 | 4,193,000 | 1.85 | 4,305,000 | 1.91 | 4,410,000 | 2.61 | 3,246,000 | 1.98 |
| 2034 | 4,525,000 | 2.18 | 4,422,000 | 1.85 | 4,203,000 | 1.86 | 4,316,000 | 1.91 | 4,423,000 | 2.62 | 3,248,000 | 1.98 |
| 2035 | 4,537,000 | 2.19 | 4,433,000 | 1.85 | 4,212,000 | 1.86 | 4,326,000 | 1.92 | 4,435,000 | 2.63 | 3,248,000 | 1.98 |

(1) Includes toll revenue generated from collection of user-fees at the toll facility located within the terminal roadway system.

project corridors would be feasible. WSA believes that the estimated debt coverage levels for the most feasible project alignments are high enough (i.e., above 1.00 and closer to the 1.25 threshold) to warrant further consideration and study for potential investment in the Access Road.

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The most current accepted professional practices and procedures were used in the development of these findings. However, there are sometimes differences between forecast and actual results caused by events and circumstances beyond the control of the forecasters, and these differences could be material.

Our project manager, Mr. Brett Johnston, and other members of the WSA study team, greatly acknowledges the valuable assistance provided by your staff, representatives of ASHTD, as well as others contacted during the course of this preliminary feasibility assessment. We sincerely appreciate the opportunity to have been involved in this study, and stand ready to assist you in the future as this project progresses.

Respectfully submitted,

WILBUR SMITH ASSOCIATES

John Smolley, Jr.
Vice President

JS/BAJ/baj

Appendix 3
Level of Service

NWARA Ground Access: LOS Analysis, Existing and Forecasted Conditions

PREPARED FOR: Northwest Arkansas Regional Airport Authority
PREPARED BY: CH2M HILL
DATE: March 22, 2005

Introduction

The purpose of this memorandum is to present the existing (2005) and the forecasted (2010, 2015, 2020, and 2025) level of service (LOS) analysis results for the roadways serving the Northwest Arkansas Regional Airport (NWARA). State Highway (SH) 264, Airport Entrance Road, Regional Avenue, and SH 12 (Cave Springs) are the primary access roadways to NWARA. Based on existing traffic count data, about 55 percent of all trips to and from the Airport come from the south via SH 264. The rest (45 percent) access the Airport from the north via SH 12. This report emphasizes the analysis for SH 264. According to a 20-year development plan at NWARA, the number of trips generated by the airport and other on-airport business are expected to grow more than four-fold. Subsequent traffic congestion will likely disrupt local communities and cause serious travel delays in the vicinity of the NWARA.

Existing Roadway System

Geometric characteristics of the roadways within the vicinity of the airport (SH 264, Airport Entrance Road, Regional Avenue, and SH 12) are summarized below:

- The primary access routes to the airport are Airport Entrance Road (from SH 264 to the south) and Regional Avenue (from SH 12 to the north).
- Airport Entrance Road provides direct through movement access to the Airport Terminal and has a one-way stop control intersection with Regional Avenue.
- Regional Avenue runs north/south from Airport Entrance Road to SH 12 and has two intersecting one-way stop controlled intersections. The first intersection provides access to the airport tower and the access route around the airport runways. The second intersection is located further north along Regional Avenue and provides access to the Cargo Terminal as well as additional general corporate office space.
- The entire internal roadway system generally consists of two, 12-foot lanes and shoulders that vary in width from two to five feet.

Figure 1 (attached) shows the general layout of the airport facilities and the roadways surrounding it.

The Airport Entrance/SH 264 intersection is stop-controlled for the traffic from Airport Entrance Road. The intersection of Airport Entrance Road and Regional Avenue is stop-

stop-controlled on the minor (western) leg only. The intersection at Regional Avenue and SH 12 is stop-controlled on Regional Avenue.

Characteristics of SH 264 from I-540 to NWARA are described below:

- This section of SH 264 is 9.4 miles long, 5.4 miles of which is "no passing" (57%). There is one passing zone on SH 264 East of SH 112 that is approximately 2.1 miles in length. On SH 264 between SH112 and the airport, there are two passing zones; they are approximately 1.1 and 0.8 miles in length.
- The entire segment generally consists of two, 12-foot driving lanes, and shoulders that vary in width from two to five feet.
- The speed limit along SH 264 varies from 30 to 55 miles per hour.
- There are four 90-degree turns on this segment and two stop-controlled intersections at SH 112.
- There are 16 other minor streets and 79 driveways that intersect this segment.

Traffic Forecasts and Assumptions

Annual average daily traffic (AADT) counts taken by the Arkansas Highway and Transportation Department for 1995 through 2003 provided the basis for the traffic forecasts. A 3 percent (3%) compounded growth rate was applied to existing background traffic volumes to forecast traffic to the Year 2025 for SH 264 East of SH 112. Data from the Northwest Arkansas Regional Airport Trip Generation - Intermodal Access Road Feasibility Study Technical Memorandum (revised March 2005) were used as the basis for traffic volumes along SH 264 near the intersection of Airport Entrance Road and SH 12 near the intersection of Regional Avenue. The Trip Generation Report assumed a 3 percent growth rate for airport-related traffic as well as baseline traffic along SH 264 and SH 12 in the vicinity of the airport.

Table 1 presents the resulting average daily traffic (ADT) for existing and future conditions used in this analysis for SH 264. The percentage of daily trips that occur during the peak hour (k factor) was assumed to decrease over time, as more trips tend to occur outside the peak period as traffic volumes grow over time. The peak hour directional distribution (d factor) of traffic was assumed to be 60 percent in the peak travel direction. Two-lane highway analysis is based on demand volumes for a peak 15-minute period within the peak hour. For operational analysis, the full-hour demand volumes needs to be converted to flow rates for the peak 15 minutes. A peak hour factor (PHF) was applied to hourly volumes to account for this peaking characteristic within the peak hour.

TABLE 1
 SH 264 Traffic Forecasts (Two-Way ADT)

| YEAR | k factor | S.H. 264 East | | | S.H. 264 between Airport Entrance and S.H. 112 | | |
|------|----------|---------------|------|-----------|--|------|-----------|
| | | ADT | PHF | Peak Hour | ADT | PHF | Peak Hour |
| 2005 | 0.12 | 7,600 | 0.93 | 590/390 | 5,100 | 0.92 | 400/270 |
| 2010 | 0.12 | 9,600 | 0.94 | 670/450 | 8,040 | 0.94 | 620/410 |
| 2015 | 0.11 | 12,110 | 0.94 | 710/480 | 11,820 | 0.94 | 830/550 |
| 2020 | 0.10 | 15,270 | 0.94 | 760/500 | 13,560 | 0.94 | 860/580 |
| 2025 | 0.09 | 19,260 | 0.94 | 790/530 | 15,680 | 0.94 | 900/600 |

The number of heavy trucks and farm vehicles in the traffic stream was based on field observations taken in February 2000. The percentage values for heavy trucks (6%) and farm vehicles (1%) were assumed to remain constant over time.

Methodology

Operations analysis for two-lane highway segments and unsignalized intersections were carried out using capacity analysis as described in the 2000 Highway Capacity Manual. Capacity analysis is the standard approach for measuring the quality of service provided by roadway segments and intersections. Capacity analysis produces a LOS grade, which qualitatively describes the operational characteristics of a roadway. LOS is described by the following letter designations: A, B, C, D, E, and F. LOS "A" represents the highest quality of service, and "F" is the worst.

For two-lane highway operational analysis and the unsignalized intersection analysis, the Highway Capacity Software (HCS) was used to conduct the analysis. HCS is the direct software implementation of the procedures in the HCM.

Two-Lane Highway Operational Analysis

The HCM procedures were the basis for determining existing and future SH 264 and SH 12 LOS. The methodologies in Chapter 20 (two-lane Class I highways) were applied for this analysis.

Two parameters are used to measure service quality for two-lane highways:

- Average travel speed
- Percent time spent following (PTSF)

Percent time spent following is defined as the average percent of time that all vehicles are delayed while traveling in platoons due to the inability to pass. The HCM methodology defines the LOS range (as a function of PTSF and average travel speed) for two-lane highways as shown in Table 2.

TABLE 2
LOS Criteria for Class I Two-Lane Highways

| LOS | Percent Time Spent Following | Average Travel Speed (mph) |
|-----|------------------------------|----------------------------|
| A | ≤35 | >55 |
| B | >35-50 | >50-55 |
| C | >50-65 | >45-50 |
| D | >65-80 | >40-45 |
| E | >80 | ≤40 |

Note: LOS F applies whenever the flow rate exceeds the segment capacity

LOS Analysis for Unsignalized Intersections

The HCM methodologies in Chapter 17 (unsignalized intersections) were applied for this analysis. Average delay per vehicle is the service measure used to assess LOS for unsignalized intersections. Table 3 shows the range for different levels of service for unsignalized intersections.

TABLE 3
LOS Criteria for Unsignalized Intersection

| LOS | Average Control Delay (sec/veh) |
|-----|---------------------------------|
| A | 0-10 |
| B | >10-15 |
| C | >15-25 |
| D | >25-35 |
| E | >35-50 |
| F | >50 |

LOS analyses were conducted for the two SH 264 intersections with SH 112 and the five intersections within the vicinity of the Airport.

Analysis

Two-Lane Highway: SH 264 and SH 12

For the purposes of this analysis, SH 264 was divided into three segments: I-540 to SH 112, SH 112 to NWARA, and west of NWARA (referred to as SH 264 East, SH 264 between Airport Entrance and SH 112, and SH 264 West respectively). SH 12 was divided into two segments, west of NWARA and east of NWARA (referred to as SH 12 West of Regional Avenue and East of Regional Avenue).

Using the traffic forecasts and assumptions described above, the projected LOS was determined for the three segments of SH 264 and the two segments of SH 12 near the vicinity of the airport. Table 4 summarizes the projected LOS from existing conditions (2005) and the horizon years (2010 to 2025) for those five segments.

Existing conditions were calculated as LOS E for the east section of SH 264. The segments of SH 264 between SH 112 and airport and the west segment are operating at LOS D. Both segments of SH 12 are operating at LOS E. It is predicted that all segments will degrade to LOS E by Year 2015. At LOS E, drivers will be in a platoon (and therefore delayed) for more than 80 percent of the time during their trips to and from the NWARA. There are a significant number of trucks, school buses, and farm vehicles on this facility, which will travel at speeds 10 to 25 mph below the desired speed for passenger vehicles. When the facility operates at LOS E, passenger vehicles will be forced to travel at these lower speeds for most, if not all, of their trips.

TABLE 4
Projected LOS (Two-Lane Rural Highway Analysis)

| Highway Segment | 2005 | 2010 | 2015 | 2020 | 2025 |
|--|------|------|------|------|------|
| SH 264 East | E | E | E | E | E |
| SH 264 between Airport Entrance and SH 112 | D | D | E | E | E |
| SH 264 West of Airport Entrance | D | D | D | D | D |
| SH 12 West of Regional Avenue | E | E | E | E | E |
| SH 12 East of Regional Avenue | E | E | E | E | E |

One uncertainty in the analysis is the k factor. Typically, the k factor for rural, low-volume facilities is higher than urban roadways. As the traffic volume increases, it is expected that the k factor for SH 264 will decrease. However, the exact future pattern is unknown, so a sensitivity analysis was run for two segments of SH 264 (the east segment and the segment between SH 112 and the Airport). Several model runs were made to test the sensitivity of varying k factors while keeping all other factors the same. The output of the sensitivity analysis is summarized in Tables 5 and 6. For reference, the projected LOS from Table 4 is presented in bold type in Tables 5 and 6.

TABLE 5
SH 264 East Sensitivity Analysis (Percent Time Delayed/LOS)

| Year | k Factor | | | | |
|------|----------|---------|---------|---------|---------|
| | 0.15 | 0.12 | 0.11 | 0.10 | 0.09 |
| 2005 | 76.1%/E | 70.5%/E | 68.2%/D | | |
| 2010 | | 73.8%/E | 71.8%/E | 69.8%/D | |
| 2015 | | 77.4%/E | 75.3%/E | 73.3%/E | |
| 2020 | | | 79.3%/E | 76.7%/E | 74.3%/E |
| 2025 | | | 83.1%/E | 77.8%/E | 80.6%/E |

TABLE 6
SH 264 between SH 112 and Airport Sensitivity Analysis (Percent Time Delayed/LOS)

| Year | k Factor | | | | |
|------|----------|---------|---------|---------|---------|
| | 0.15 | 0.12 | 0.11 | 0.10 | 0.09 |
| 2005 | 63.9%/D | 58.8%/D | 57.2%/D | | |
| 2010 | | 66.8%/D | 69.4%/D | 64.3%/D | |
| 2015 | | 80.0%/E | 77.3%/E | 74.7%/E | |
| 2020 | | | 81.5%/E | 78.6%/E | 75.5%/E |
| 2025 | | | 85.3%/E | 79.9%/E | 82.9%/E |

The sensitivity analysis suggests that the LOS grade will be the same with any reasonable assumption for the k factor. Even with a conservative assumption for traffic growth and the percentage in the peak hour, the facility will operate at LOS E by 2015. In other words, with any reasonable assumption of growth, nearly all drivers will be delayed on SH 264 by 2015.

Unsignalized Intersections

All the intersections in the study area are one-way stop controlled in the minor street direction. Seven intersections were analyzed using the methods of two-way stop-controlled intersection analysis described in Chapter 17 of the HCM. Turning movement volumes were generated based on projected future demand. Table 7 presents the results of the analysis for the seven intersections in the study area.

TABLE 7
 Unsignalized Intersection LOS Analysis (Minor Street Approach)

| Intersection | 2005 | 2010 | 2015 | 2020 | 2025 |
|---|------|------|------|------|------|
| S.H. 264/S.H. 112 North | B | C | D | E | F |
| S.H. 264/S.H. 112 South | B | B | C | C | E |
| SH 264 and Airport Entrance Rd. | B | C | F | F | F |
| SH 12 and Regional Ave. | A | B | B | D | F |
| Airport Entrance Rd. and Regional Ave. | B | D | F | F | F |
| Regional Ave. and Cargo Terminal | B | C | F | F | F |
| Regional Ave. and Air Traffic Control Tower | B | B | C | F | F |

Note: LOS presented here indicates minor street LOS. All left-turns from major streets will operate at LOS C or better (generally LOS A or B).

Conclusions

Without improvements, the performance of SH 264 will degrade significantly in the next ten to twenty years. The two-lane facilities are currently operating at LOS D/E, and LOS B at the unsignalized intersections. However, by 2010 the performance will degrade to LOS E on the two-lane segments, and to LOS F at stop-controlled intersections by 2015.

By 2010, vehicles will be delayed by platoons for more than 80 percent of their trips on SH 264, frequently forcing passenger cars to follow slow-moving trucks, buses, and farm vehicles. With a significant percentage of trucks on the roadway and noticeable numbers of slow-moving school buses and farm vehicles, drivers will be faced with an increasing and unpredictable travel time on the 9-mile section of SH 264 from I-540 to the airport.

Intersection analysis from Table 7 above shows that four of the seven unsignalized intersections will begin to degrade significantly by Year 2015. By Year 2025, all intersections except one will be operating at LOS F. By 2015, signalization and/or other roadway intersection improvements would be needed for the intersections to operate at an acceptable LOS.

The analysis presented above indicates significant operational problems for an airport facility. The Airport Ground Access Planning Guide, prepared jointly by the Federal Highway Administration and Federal Aviation Administration, strongly emphasizes the need for effective ground access to airport facilities. The guide provides examples of the potential economic consequences of poor accessibility to airports, and recommends the development of alternative strategies and actions to improve performance.

The analyses described here highlight the future degradation in airport ground access that will occur without improvements to SH 264. The facility will operate at an unacceptable LOS in the next several years, and improvements are needed so that effective ground access can be provided to the public.

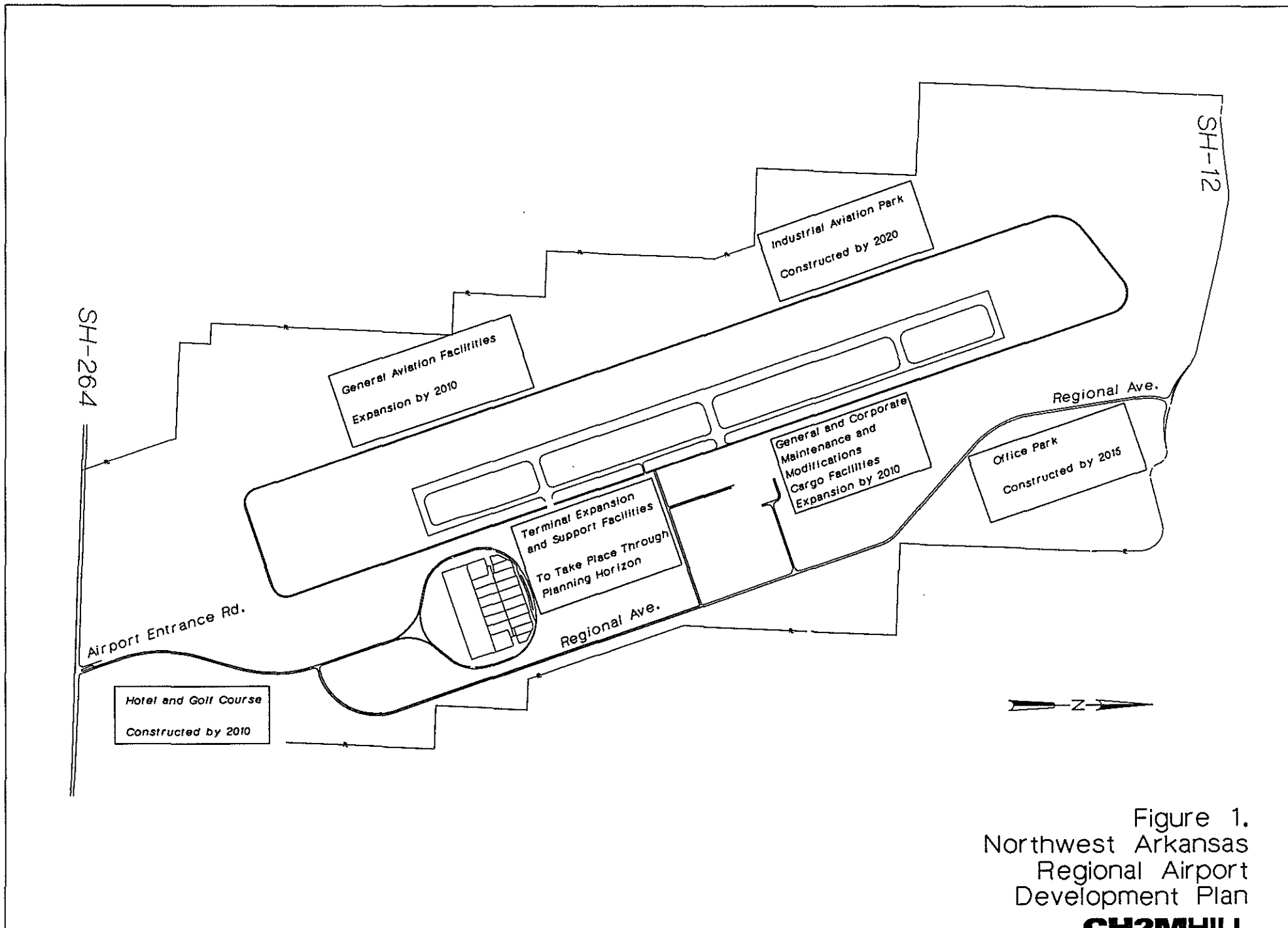


Figure 1.
Northwest Arkansas
Regional Airport
Development Plan

CH2MHILL